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ORIGINAL ARTICLES.

REPORT OF TWELVE CASES OF ALEXANDER'S OPERATION.

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Since October, 1886, I have performed the operation of shortening the round ligaments, known as Alexander's operation, twelve times. My object in presenting a report of the cases operated upon is three-fold: 1. To elicit a discussion of the subject; 2. To record, as a part of the history of the operation, a number of successful cases; and, 3. To add a few original observations, and to call attention to what has in my experience seemed to be an improvement in the mode of operating.

This operation has been brought forward as a desirable substitute for many of the operations and appliances which have so long been used in the treatment of procidentia and retro-displacements. Uterine prolapse in its various degrees, and backward displacement of the uterus are among the most common, and certainly not the most curable, of the ailments with which the gynecologist is called upon to deal. It is true that relief may be afforded in most cases by means of a properly adjusted pessary, but it is also true that in all but a small proportion of cases in which relief is secured in this manner, the pessary becomes a life-long necessity, which is often attended by very great inconvenience, and is not infrequently productive of serious injury. In many cases, a woman who is dependent upon a pessary to retain the uterus in proper position, is almost equally dependent upon a physician to inspect the appliance at stated intervals, or whenever discomfort is experienced. In by far the great majority of cases also, it is found necessary to substitute for the old appliance one of larger size or different form, as each successive ring or lever or other device loses its efficiency by the stretching of the vaginal walls. The statistics of the results of the mechanical treatment of these affections are such as to justify the statement that by this method there is little or no hope of radical cure, even after years of treatment. In two series of cases of retroversion treated by eminent gynecologists, numbering 643 persons in all, only eight were reported cured by means of vaginal pessaries; and of prolapsus uteri, Thomas says frankly: "The prognosis as to cure is very bad, and even as to complete relief is not good."

The unsatisfactory character of the results which have been attained in the treatment of this class of uterine affections by pessaries, is well attested by the many surgical procedures which have been suggested for their relief. The numerous forms of elytrorrhaphy and colporrhaphy, to the list of which almost every leading gynecologist has contributed some modification, have successively promised wonderful results; but with the exception of the median colporrhaphy of LeFort, have all proven ineffective except in the most favorable cases. As regards the results of the surgical methods which have been in vogue before the introduction of the method of Alexander, Dr. T. Gaillard Thomas says, "It is never safe to promise a good and permanent result from any of the operations of elytrorrhaphy."

When the claims of Dr. Alexander for his operation of shortening the round ligaments were first brought forward, I felt exceedingly skeptical regarding the value of the procedure; but after making some careful dissections of the parts involved in the operation, I became convinced that my skepticism was largely the result of ignorance respecting the nature of the round ligaments and their functions. The experiments of Savage and others have shown that when the uterus is in a normal position, the round ligaments are relaxed and contribute nothing to its support. The curved and somewhat tortuous course which they pursue from the cornua of the uterus between the folds of the broad ligament and around the bladder to the inguinal canals, gives them a slack of about two inches. The conclusion from this fact that they perform no important office in the maintainance of the uterus in its normal position, is, however, erroneous. The round ligaments are the only structures which are so related to the uterus as to make tension upon it from above. The action of the lateral ligaments seem to be largely that of guys, by which the organ is so balanced that it may be kept in its proper place by the pressure of the contiguous organs, the bladder in front and the bowels behind. Very little force is required to sink the uterus in the pelvis to the extent of two inches. When a woman is coughing violently, straining at stool, or lifting heavy weights, the uterus is doubtless forced downwards in the pelvic cavity, and thus the round ligaments are brought into efficient action. It

seems to me very clear that the chief function of the round ligaments is to prevent excessive downward displacement of the uterus from such causes as are very frequently, though temporarily, in action.

The general lack of confidence in this operation has seemed to be based upon a belief that the round ligaments are not sufficiently strong to resist the strain to which they are subjected. An experiment which I made for the purpose of testing the strength of the ligaments, may be of interest in this connection. Having removed the outer four inches of two ligaments, I secured the two ends of one to silk ligatures. While the ligament was suspended by one ligature, a weight was attached to the other, which was gradually increased to eight pounds and ten ounces, when the ligament broke, or rather was cut off by the ligature. The stretching of the ligament during the experiment did not amount to more than one-fourth inch. When it is remembered that the portion of the ligament removed is its smallest and weakest part, and that the weight of the uterus is at most only a few ounces, it will at once appear that the relative and the absolute strength of these structures has been very greatly underrated. A further consideration of much importance is that the ligaments are not expected to maintain perpetually the strain to which they are at first subjected. In one of the accompanying cuts, (Fig. 1), I have attempted to show the normal position of the uterus and its relations to the round ligaments and contiguous organs.

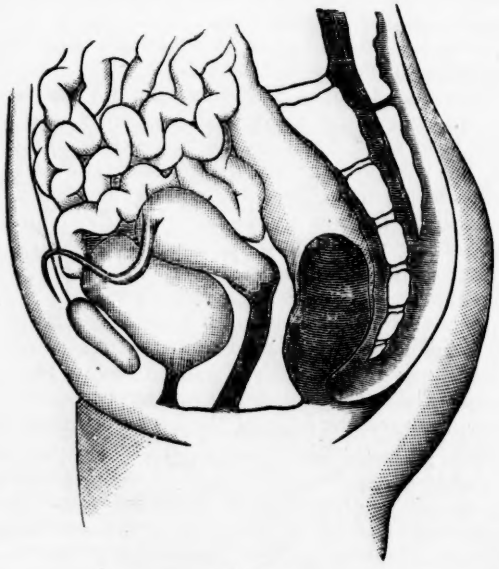

FIGURE 1.

As will be seen by reference to the cut, the uterus, when in its normal position, lies forward, out of the line of downward action, and its wedge-shaped body is buoyed up by the bladder in front and the inflated intestines behind. When the uterus falls backward, it lies across the pelvis in such a way that it is directly in the line of downward action (Fig. 2), the intestines enter the anterior cul-de-sac, and the weight of the abdominal viscera is brought to bear in such a manner as continually to force the organ lower down. In efforts to relieve the bowels, the contents of the colon impinge upon the upper side of the uterus in such a manner that the whole force of the effort to relieve the bowels is felt by the round ligaments, which are made taut and kept under continual strain. When the ligaments are shortened by the performance of Alexander's operation, the uterus is rescued from its abnormal position and is brought back to the position shown in Fig. 1. The intestines are made to retreat from the anterior cul-de-sac and assume their normal position behind the uterus. When this has been accomplished, the normal forces

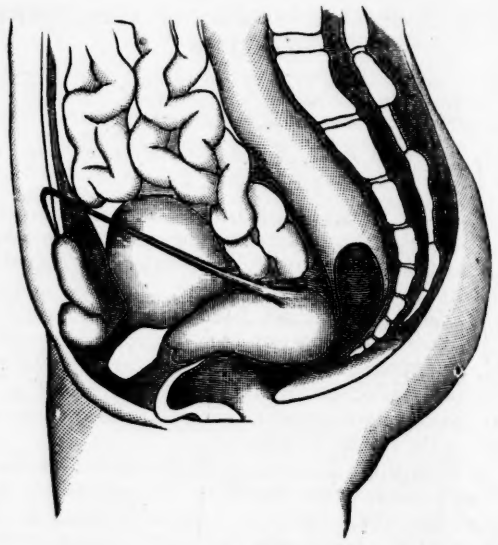

FIGURE 2.

which sustain the organ come into play, and it is only expected of the round ligaments that, as Dr. Alexander expressed it, they shall act as mooring ropes to hold the uterus forward, so that really only a very small amount of strain is brought upon them. Their ability to do this has been amply demonstrated not only by the experiments referred to, in which I showed their tensile strength to be very great, but in the numerous cases of this operation in which they have satisfactorily performed the service expected of them. Both analogy and the results of pathological investigation show that in some cases, at least, retrodisplacements and procidentia are due not solely to a stretching of the supporting ligaments, but to an hypertrophy or hyperplasia of these structures. I have found positive proof of this fact in several cases of extreme retroversion of several years standing. Instead of finding the round ligaments attenuated, as I expected, I found them extraordinarily large. In two instances the ligaments were fully 18 mm. in diameter. By means of this operation, a process of involution is set up, and it is only required that the round ligaments shall hold the womb forward out of the "abdominal current," while this process is taking place, and the surrounding organs are readjusting

themselves in normal relations to the uterus. Changes of this sort are sometimes secured by a suitably adjusted pessary; but by shortening the round ligaments, this end is much more efficiently and certainly attained.

As regards the indications for the operation, I believe that it may be usefully and properly performed in the following classes of cases:

1. Cases of procidentia in which the causes are chiefly such as operate from above, and in which the patient is not relieved by the operation of perineorrhaphy, when this operation is required. I am not sure that the operation is applicable to women who are many years past the menopause, but in cases of this sort I have obtained very satisfactory results by means of the median colporrhaphy of LeFort.

2. Cases of retroversion or retroflexion which are not cured by the employment of less heroic means.

3. Cases of anteflexion combined with retroversion and prolapsus of the ovaries. I see no reason why the operation should not be also employed for the relief of prolapsus of the ovaries alone. I have now in hand a case of this sort which has resisted for years all other means of treatment, and upon which I intend to make a trial of the operation.

4. Cases of anteversion where the fundus lies behind the pubis. I believe the view of Thomas and some other gynecologists, that anteversion may be due to shortening of the round ligaments, is incorrect. Indeed, I think I have proved this to be the case by relieving a case of extreme anteversion by the performance of Alexander's operation. I have attempted to show in Fig. 3 the relation of the

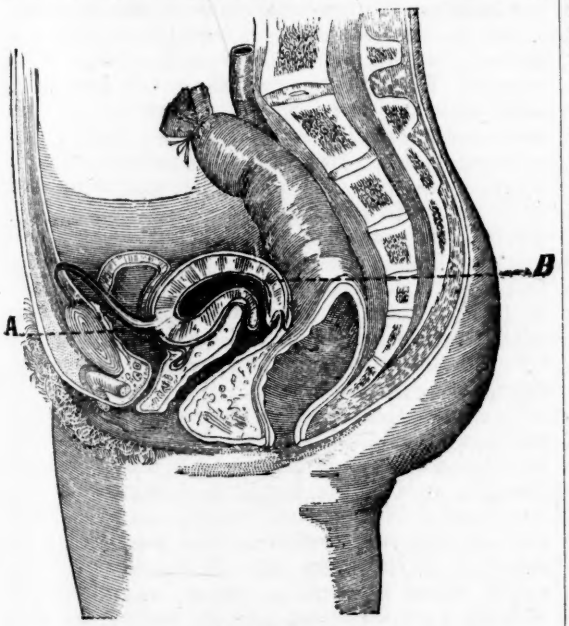

FIGURE 3.

round ligament to the uterus in anteversion. By a glance at the cut it is easy to see that anteversion cannot possibly occur as the result of shortening of the round ligaments. I will remark further upon this point in reporting the case referred to.

I do not wish to be understood as advocating that all cases of displacement, either prolapsus, retroversion, or anteversion, should be subjected to Alexander's operation. I have long been convinced that many cases of displacement require no treatment at all, certainly no surgical operation. The treatment of a displacement which gives rise to no symptoms, either local or remote, may, in my estimation, be properly termed meddlesome gynecology. In many cases in which treatment is required, a cure may be effected by simple means, especially by the removal of such causes as improper dress, a chronic habit of constipation, or weakness of the abdominal muscles. In all cases, whether this operation is resorted to or not, such means should be employed as will strengthen the abdominal muscles, restore the natural supports which may have been weakened, and build up the general health.

The following is a report of all cases on which I have performed this operation up to date:

Case 1. Mrs. R., aged 24, suffering with complete procidentia. The cervix uteri protruded fully two inches, and was lacerated to the os internum on both sides. The patient suffered with very profuse menstruation, and was in a very feeble condition. The same patient had been under my care in 1884, at which time I found the same conditions which had then existed for four years, the procidentia having begun before marriage. At that time I performed trachelorrhaphy and anterior and posterior colporrhaphy, by which she was temporarily relieved. In 1885 she again became pregnant, and at childbirth the cervix was again lacerated. The procidentia returned as bad as ever, and existed for more than a year before I again saw the patient. All sorts of pessaries had been tried without relief.

I thought this case a suitable one for the trial of Alexander's operation, and after making some preliminary dissections on the cadaver, I operated, Oct. 29, 1886, having repaired the laceration of the cervix a few weeks previous. The ligaments were found to be very small, but both were found and drawn out four inches. The ligaments were secured by deep silver sutures and superficial silk sutures. A few small vessels were tied with cat-gut. Drainage tubes were placed at the lower end of the wound, and the uterus supported in position by dry cotton pledgets well dusted with powdered boracic acid. The cotton support was changed every day, and a hot vaginal douche administered. Drainage tube was removed on third day. The right side healed readily, the left side more slowly. Patient was discharged, and returned to her home Dec. 31, 1886, in excellent health, with none of the former symptoms. Uterus was held perfectly in position, without pessary of any sort. Patient able to be on her feet all day without difficulty. I heard from this patient several months later. She was then engaged in business which required her to be upon her feet constantly. Was wearing no pessary, and was pronounced by her family physician to be in perfect health. At last accounts she was still well, with none of the old symptoms.

Case 2. Miss L. B., aged 25. At eighteen had a

severe fall from a carriage. At next menstrual period had an epileptic convulsion. Subject to frequent attacks of epilepsy ever since, and had suffered constant headache and backache. Had been under the care of several physicians, who had employed pessaries and treatment of various sorts for the relief of retroversion. On making examination, found retroversion and flexion, the fundus very low and nearly double normal size, ovaries enlarged and prolapsed. Patient's general health was wretched. Was emaciated, extremely nervous, depressed, and had tender spine, moist palms, and constant headache. Was unable to wear any kind of pessary on account of pain caused by pressure on the ovaries; but when a properly adjusted pessary could be tolerated, had always found relief from the epilepsy, so long as the uterus was held in position. For some years this had been accomplished by means of a pessary with an external support; but as this had become intolerable, it had to be abandoned. Patient had used bromides freely for the relief of epilepsy, as the result of which there was decided hebetude, and very bad digestion. The patient was altogether wretched.

Operation March 3, 1887. Both cords were found well developed. Shortened three and one-half inches. Secured the ends with deep sutures, wire upon one side, cat-gut upon the other. Placed drainage tube and applied iodoform dressing. Placed stem pessary to hold the uterus in position. Had to remove the pessary on third day on account of pain and epileptic convulsions which seemed to be induced by it. Pain and convulsions ceased immediately upon its removal. Wounds healed by first intention. Highest temperature reached at any time, 100° F. Patient discharged, April 18, relieved of backache and other nervous symptoms. Was gaining rapidly in flesh. The fundus uteri was held in good position, but the cervix was still flexed on account of the enforced premature removal of the stem pessary. Recent reports showed great improvement in all particulars. Great gain in flesh and strength. No epilepsy.

Case 3. Miss C. B., aged 25. This patient came first under my care at the Sanitarium in October, 1885. At that time was so feeble that she had been bed-ridden most of the time for three years, and was unable to engage in any kind of labor. Uterus was retroverted and prolapsed to the third degree. Both ovaries were also prolapsed, enlarged, and tender. Among other leading symptoms, were a highly sensitive spine, great nervous irritability, mental depression, palpitation of the heart, deranged digestion, extremely profuse and painful menstruation, usually lasting six days. This patient had been under constant medical treatment for years. Had consulted eminent and skillful physicians who had exhausted their skill in efforts to find some form of pessary which would afford relief, but without securing more than temporary benefit. After six months treatment, which consisted chiefly of measures calculated to build up her general health and increase the tone of the muscular system, she returned home very greatly improved, but gradually drifted back into her old condition and returned, March 4, to see if anything could be done for her.

Operation March 23. Both ligaments were found and shortened about four inches, and were secured in the wound in the usual manner. Highest temperature registered was 100.2° F. Wounds did not unite by first intention, which was due to sloughing of the outer ends of the ligaments, which were tucked in the wound instead of being cut off. Patient left the surgical ward 24 days after the operation, being able to go to her meals in the general dining-room in a wheel chair. Up to the date of the present writing, the womb has remained in a slightly anteflexed position. The ovaries, which were formerly very low, can not be discovered by digital examination. The following is the patient's own description of her own condition before the operation and since:

"I had suffered constantly for six years with severe pain in my head, back and pelvis. Could not stand erect during these years on account of extreme soreness in the pelvis and abdomen. During menstruation I was compelled to keep my bed for five or six days and in great agony. Complete nervous prostration. Could not be on my feet five minutes at any time without great discomfort. My spine was so tender I could not bear the touch of clothing. Almost continual palpitation of the heart. Now, after having Alexander's operation performed, I am able to sit, ride, or walk, with ease. The pain and soreness has disappeared from my spine as well as from the pelvis and abdomen. My head is clear. My heart is all right. Instead of menstruating six days, the menstruation lasts but two days, with almost no pain, and I am able to be about during the time, which was utterly impossible before. And last, but not least, my shattered nerves are fast recovering."

Case 4. Mrs. M., aged 30. Retroversion and slight flexion, uterus lying very low in the hollow of the sacrum. Patient complains of constant pain in the right thigh and through the right side of the body. Both ovaries tender and prolapsed. Vaginal and cervical catarrh. Hypertrophy of cervix with induration. Menstrual flow profuse, attended by much pain. The patient's general health had suffered much. She was very neurasthenic. Complained much of inability to sleep. Had been under excellent medical care for many years, but had steadily declined in health. Had borne one child, since which time her troubles had been aggravated, but believed the retroversion was present before marriage, dating back ten years.

Operation March 29. Uterus drawn forward as much as possible. Ligaments shortened about four inches, and secured in the wound by cat gut sutures, the outer ends of the ligaments being tucked into the wound. Highest temperature, 100.2° F., which was only reached a few times, and was due to the sloughing of the outer ends of the ligaments, by which union by first intention was prevented. Wounds were somewhat slow in healing, but gave the patient little discomfort. Menstruation occurred the second week following the operation. The patient expressed herself as very comfortable. No pain or inconvenience excepting retention of the urine, necessitating the use of the catheter a few times. This I attributed to the pressure of the sup-

port by which the uterus was held in place rather than to the pressure of the womb, as relief was obtained when the cotton pledgets were removed. The patient said she had not had so easy a time in many years. Patient discharged from the ward April 27. Allowed to walk about the house. Went home six weeks later relieved of all her old difficulties, and with the uterus in perfectly normal position. Ovaries out of reach. The patient was able to take vigorous exercise in the gymnasium and long walks without any inconvenience whatever. Stronger than ever before in her life, sleeping well and in excellent spirits, wearing no pessary. I was more than usually pleased with the results of this case, as the patient had been warned against the operation by her family physician, who, after a consultation with a professor of gynecology in a neighboring State, informed her that the operation was "difficult aud dangerous," and not likely to secure any good results; but the failure of all other means to secure to her relief from her many sufferings, induced her to submit to the operation, and she was well satisfied with the results.

Case 5. Mrs. D., aged 28. In good health until birth of first child, nine years previous, when she "got up too soon." Constant, distressing pains in the ovaries, extending to the limbs. Severe dysmenorrhœa. Pain and tenderness the whole length of the spine. Constant occipital headache. Patient extremely nervous. Confined to bed much of the time. Found uterus retroverted and flexed. Ovaries tender and prolapsed.

Operation April 13. Ligaments shortened four inches, and secured by deep and superficial cat-gut sutures. The outer ends of the ligaments were tucked into the wound. The second day following the operation the patient suffered considerably from swelling of the uterus about the wound and over the pubes, which extended into the labia of the right side. Pain and swelling relieved by poulticing. The patient had been accustomed to the administration of large doses of morphia whenever suffering paln, and received several doses of ⅛ to ¼ gr. of morphia administered hypodermically. The outer portion of the ligaments sloughed, and the wound healed slowly by granulation. Highest temperature 102.3° F. Patient went home on June 3 on her feet, and gaining rapidly in strength and flesh. Uterus and ovaries were in normal position, menstrual period much less painful than formerly.

Case 6. Mrs. V., aged 30, suffered many years with backache and pelvic pains. Severe pain at menstrual periods. General and nervous debility, mental depression, dyspareunia, and disordered digestion.

Operation, April 3. Ligament on right side was found well developed, but was firmly adherent to the internal ring, so that it could not be drawn forward. Suspecting that this might be due to some anatomical peculiarity, I closed the wound in the usual way, and did not operate upon the left side. Wound healed by first intention. Highest temperature 100° F. I have since regretted that I did not operate upon the left side, as in subsequent cases I have found a great variation in the condition of the ligaments of the two sides.

Case 7. Mrs. W., aged 42. The patient complained of constant pelvic pain, chiefly in the left side. Greatest at night. Much increased during menstrual period. Also pain in the lumbar region, and continual bearing down pain. Patient very feeble. Unable to walk any distance or to perform household duties. Very great nervous prostration and general weakness. Physical examination showed extensive abrasion of the cervix with considerable hypertrophy and induration of the entire uterus. The last physician who had examined the patient had pronounced the disease of the cervix to be malignant. Great tenderness and throbbing all about the uterus.

After a few weeks' preparatory treatment, Alexander's operation was performed on April 21. Both ligaments were found and shortened about four inches. Ends of ligaments secured by cat-gut sutures. Wounds dressed in the usual manner. Considerable swelling of the wounds which only partially healed by first intention. Highest temperature 101.1° F., which was due to a small abscess which formed at the upper angle of the wound on the right side. Patient left the ward May 17. Was allowed to walk May 26, with the uterus and ovaries in normal position. No pelvic pain or tenderness. No throbbing. Uterus normal size. No local symptom of any sort except slight vaginal catarrh. Patient was instructed to continue the employment of the hot douche, massage, and general faradization under the care of a good nurse, and reports continued and very satisfactory improvement.

Case 8. Miss L., aged 29. Had been out of health for five years. For three years very miserable, and under constant medical care. Severe and constant lumbar pains, occipital headache, and a great variety

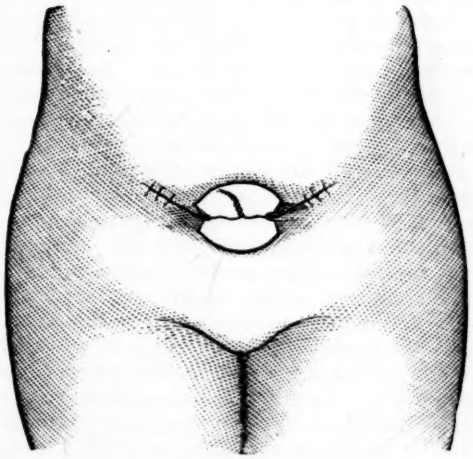

FIGURE 4.

of neurasthenic symptoms. Painful and profuse menstruation, dysmenorrhœa and severe menorrhagia. Uterus found retroverted and slightly retroflexed, lying in the hollow of the sacrum. Both ovaries prolapsed and tender. Much tenderness and throbbing all about the uterus.

Operation, April 24. Ligaments shortened about

four and one-half inches. From observation in previous cases, I had come to the conclusion that failure to secure immediate union was in some cases due to traction of the ligaments upon the sutures. To obviate this difficulty, I secured a silver wire to the end of each ligament, and twisted the ends of the wires together over a broad plate of hard rubber placed upon the pubes and between the lower angles of the wound, as shown in Fig. 4. In other respects the wounds were closed in the usual way. There was little or no swelling of the wounds, which healed by first intention. Stitches removed one week after operation. Later there was a slight discharge from the upper angle of each wound. Highest temperature 99.9° F. Four weeks after the operation patient was allowed to go upon her feet without other support than two small cotton pledgets. At the present time, the patient is still under treatment for digestive disorders and nervous conditions, but the uterus is of normal size and in normal position, and patient has very few local symptoms of any sort. The ovaries are out of reach, and apparently healthy.

Case 9. Mrs. M., aged 39. Had suffered with prolapsus and retroversion for fifteen years. Had had good medical care, but found no relief, and for several years had been thoroughly broken down in health. Suffered with all the symptoms which usually accompany the conditions named. Upon examination, found the uterus retroverted and flexed, lying very low in the hollow of the sacrum. Displacement easily reducible, but the organ would not remain in position.

After a few weeks' preparatory treatment, I operated, April 20. Found ligaments exceedingly attenuated. The right ligament was not more than 1½ lines in diameter. The left was a mere filament, which broke in the attempt to secure it. Shortened the right ligament five inches. Secured it by two deep sutures of silver wire attached to lead buttons. Wounds healed by first intention. Ten days after the operation found the uterus partly retroverted, so that the fundus was felt in posterior cul-de-sac. I feared the operation was a failure, as I observed that the posterior wall was closely adherent to the fundus, showing that adhesions were present which I had previously overlooked. I think the oversight was due to the fact that the uterus was placed in position with perfect ease, which was made possible by the very relaxed condition of the vaginal walls. Ten days later, on examination, found the uterus well anteverted; the fundus was easily felt in front, and could not be found behind. The ovaries, which were previously within easy reach, could not be found. From this time until June 3, when the patient returned to her home, the uterus remained in perfect position. The patient was able to be about upon her feet as much as she chose, without support of any sort, yet the uterus showed no inclination toward prolapse or retroversion. There was a notable decrease in the size of the organ, and the adhesion of the posterior wall to the fundus had disappeared. This case was of great interest to me, as it demonstrated the ability of a single ligament, and that of very small size, to resist the strain not only of the weight of the uterus, but of the vaginal walls attached by adhesion, and ultimately to break the uterus loose from its attachments and restore it to a normal position. The fact that the uterus remained so perfectly in position I attributed to the readjustment of the surrounding organs in their normal positions, and especially the return of the small intestines to their normal position behind the uterus. When last seen, the patient was relieved of most of her former distressing symptoms, and was rapidly gaining in flesh and strength.

Case 10. Miss H., aged 30, had been engaged as a teacher for many years. Had suffered with constant weariness, severe pain in the lumbar region through the pelvis, and the general symptoms of nervous debility and obstinate constipation. Physical examination showed retroversion and flexion, uterus lying low in the hollow of the sacrum, ovaries low and tender, also tenderness of the body of the uterus. Patient had had much local treatment; was last under the treatment of an eminent specialist in St. Louis, Mo. All sorts of pessaries had been tried without benefit, and the patient had become a confirmed invalid.

Operation, May 5. Both ligaments found and shortened about five inches. Wounds healed by first intention, but afterwards opened slightly at the upper angles. Highest temperature 100.1° F. Patient left the ward 24 days after the operation, and has been steadily gaining since. Is relieved of the lumbar and pelvic pain. Bowels are regular. Uterus and ovaries are in perfect position.

Case 11. Mrs. N., aged 47. Never pregnant. The patient had suffered from complete procidentia and a great variety of local and general symptoms for 11 years. Severe pain at menstrual period. Eighteen months previously I had performed a posterior colporrhaphy by a modification of Simon's method, after which it was possible to hold the womb in position by means of a lever pessary. Previous to this time the organ would not remain in position for five minutes when the patient was on her feet, without the aid of an inflated rubber ball. The patient was very comfortable for a few months, when the pessary became displaced and began to give discomfort. It was removed by her home physician, who did not succeed in again affording relief by the aid of a pessary. She again consulted me March 23, 1887, when I found the condition as regards procidentia nearly as bad as before the operation.

Operation performed May 9. Ligaments were small, and were not so much elongated as I expected to find them. The uterus was drawn up as far as possible, but I was not able to shorten the ligaments more than 2½ inches. Secured the ligaments over a rubber plate as in the preceding case, and closed the wound in the usual manner. The left side healed by first intention. The right side was not so fortunate. The superficial portions of the wound healed by immediate union, but subsequently opened up and closed by granulation. Highest temperature was 101°, which occurred eight days after the operation and was due to suppuration in the left wound. Thus far the uterus remains in anteversion, and there is no sign of prolapsus, although before the operation the

prolapsus was constant, even when the patient was lying on her back.

Case 12. Miss M., aged 33, has been an invalid for eight years; has been under medical care most of the time. Very weak and nervous, unable to be upon her feet any length of time, and incapable of exercise of any sort. Suffers with constant pain in pelvis, which is greatly increased at the menstrual periods, particularly in uterus and left ovary. Profuse leucorrhœa. Constant bearing down, and great distress in lower abdomen when on her feet. On local examination found complete anteversion with anteflexion of first degree. As all sorts of pessaries and other means of treatment had been employed without success, I determined to see what could be done for a case of this sort by Alexander's operation.

Operation, May 31. Found both ligaments, which were rather small in size. After freeing ligaments from their attachments, and before making traction upon them, I introduced one finger into the vagina and placed it upon the fundus of the uterus, which lay under the pubes, while the cervix was in the hollow of the sacrum. With the finger of the right hand in this position, I made traction with my left hand upon the two ligaments simultaneously. I felt the uterus dragged upward away from the finger of the right hand, it being lifted fully two inches upward and backward, where it was retained, the ligaments being secured over a rubber plate as in preceding cases. The wounds were closed in the usual manner. Since the operation the patient has been entirely relieved of the bearing down pain which she previously suffered more or less, even when lying in bed, although, of course, the result of the operation cannot be determined until she gets upon her feet.

It seems to me that this case demonstrates not only the utility of Alexander's operation in cases of extreme anteversion, but also the erroneous character of the views which have heretofore been held by some gynecologists, in attributing anteversion to abnormal shortening of the round ligaments. Thomas gives shortening of the round ligaments as one of the causes of anteversion, and in speaking of the changes which occur in the uterine ligaments in cases of anteversion, he further states: "In anteversion the utero-sacral ligaments are generally shortened, and there is no doubt that the round ligaments are similarly altered." The fact that the uterus was lifted bodily out of its abnormal position and drawn backward to its normal position by the round ligaments, and that it was found necessary to shorten the ligaments fully three inches, shows that anteversion as the result of abnormal shortness of the round ligaments is an utter impossibility. It would also seem to demonstrate that shortening of the ligaments does not occur in anteversion—at least that a longer period than eight years is necessary even for the beginning of a change of this sort.

It would seem that a consideration of the anatomical relations of the round ligaments, the internal abdominal ring and the uterus, would be a sufficient demonstration of the ability of the ligaments to raise the womb to its normal position, and the impossibility of anteversion occurring as the result of shortening of the ligaments. The point at which the round ligaments enter the inguinal canal is halfway between the spine and pubes, and the anterior superior spine of the crest of the ilium is opposite the middle of Poupart's ligament; so that, with the uterus in anteversion, the action of the ligaments is calculated to restrain the organ from extreme anteversion. I am inclined to the belief that extreme anteversion cannot occur without elongation of the ligaments.

[Since this paper was written, the patient has left the surgical ward, and has now been upon her feet for several weeks. The uterus remains in perfect position, and she is quite relieved of the distressing "bearing down" of which she previously suffered. I feared that when the patient should get upon her feet, the uterus would rapidly return to its old position under the pubes; but, to my surprise, the fundus has been steadily retreating from a half anteverted position until, at the present date, August 1, the uterus is in a position which would be perfectly normal were it not for the fact that the slight anteflexion which existed still remains. It is necessary to introduce the finger to its full length in order to be able to reach the fundus.]

THE RELATION BETWEEN ERYSIPELAS AND PUERPERAL FEVER, CONSIDERING ERYSIPELAS BOTH AS AN ACUTE AND A LATENT DISEASE.

Read before the Section on Obstetrics and Gynecology, at the Thirty-eighth Annual Meeting of the American Medical Association held at Chicago, June, 1887.

BY A. MACLAREN, M.D.,
OF ST. PAUL, MINN.

Before proceeding to the discussion of this subject let me present to you, in as concise a form as possible, my definition for the term puerperal fever. It is *not* a specific fever, as Dr. F. Barker would have us believe, but a disease due to the absorption, by a puerperal patient of some septic poison; this poison being absorbed either by the lymphatics or the veins at the site of some breach of continuity in the parturient canal. It is then, in short, nothing more or less than septic fever, showing the same pathological changes and giving the same clinical symptoms as are seen in different surgical patients who have suffered from septic infection.

In the year 1886 there were published two particularly valuable works on the subject of Obstetrics. The first of these, Cazeau and Tarnier's "Theory and Practice of Obstetrics," with its 1,200 pages, does not make the slightest reference to the relation existing between Erysipelas and Puerperal Fever. In Dr. Mundé's appendix, however, there is this note bearing upon the subject. "That the exanthemata cause puerperal fever I do not believe, for while after labor the material organism has lessened power to oppose the approach of disease, and is less able to withstand its inroads, scarlatina or other exanthem, when it appears at this time, still preserves its distinctive characteristics, though perhaps running an

unusually malignant course; yet we cannot call it puerperal fever." As Dr. Mundé makes no mention of erysipelas, I understand that he here includes it with the exanthemata.

The second work to which I refer is Dr. Lusk's "Science and Art of Midwifery." There we find a very exhaustive *résumé* of all the latest theories and investigations as to the nature and causation of puerperal fever, which Professor Lusk sums up in these words. "Thus we find in surgical fever, in puerperal fever, in diphtheria and in erysipelas, the presence of a common element which links them together, and which establishes the relationship which has so long been recognized as existing between these various processes."

This connecting link of which Dr. Lusk speaks is the chain-like micrococci which up to the present time have resisted all efforts at differentiation. Among the workers and authorities in this field, he quotes such men as Koch, Lukomski, Doléris, Samuel and Virchow, the last named author upholding this theory of bacterial origin in these words, "Especially in this connection are to be mentioned the *diphtheritic* process and the *erysipelatous*, especially erysipelas malignum. The granular deposit in diphtheritically affected tissues, of which I formerly spoke, has more and more proved to be of a parasitic character." I have as you will see simply reiterated Dr. Lusk's arguments and for two reasons, 1. I do not feel myself competent to discuss the bacterial element of the disease, and, 2. I whish to show the wide difference of opinion between the two schools as shown by these two eminent teachers, differences which would lead them widely apart in the treatment of puerperal fever and especially in the prophylactic treatment of the disease.

Before leaving this part of my subject let me call your attention to Dr. Joseph Kucher's work on "Puerperal Convalescence." Dr. Kucher takes the position that Semmelweiss' theory for the causation of puerperal fever is the only true standard, and that the septic poison which produced the disease is probably the chain-like micrococcus. In several places Dr. Kucher takes the position that the poison of erysipelas can produce puerperal fever, mentioning cases to prove his position which I shall refer to later.

There are many surgeons who contend that erysipelas is essentially a skin disease, with more or less severe constitional symptoms, and that we must have the skin eruption or else the disease cannot be erysipelatous in nature. In Holmes' "System of Surgery," we find this sentence: "It has been objected by Sir W. Lawrence, who in this supports the views of Vogel and Hildenbrand, that to justify the notion of the mucous and serous membranes being affected by erysipelas, it must be shown that the same phenomena are observable in them as are seen in the skin." Holmes answers these objections in these words: "Besides diffuse cellular inflammation, there are many diseases which do not produce the characteristic cutaneous inflammation of erysipelas, yet are *probably* closely allied to it, as e. g.; *phlebitis*, both external and internal, *inflamed absorbents* and puerperal fever. The same may be said of some forms of inflammation of the mucous and serous membranes. For though the inflammation of the skin is absent, yet if the constitutional conditions be the same, they must be regarded as pathologically identical with erysipelas, however the expression of the condition may differ; just as in *syphilis*, the same virus may produce simple chancre or phagedenic sore, or various forms of cutaneous diseases, or deep seated inflammation." The clinical fact that a puerperal woman my have a localized erysipelas of the skin in some part of the body, and *not* have puerperal fever is to my mind no *proof* that erysipelas cannot *cause* puerperal fever. It is simply the woman's good fortune, for if the bacillus had been planted in the parturient canal instead of on the skin, the woman would have suffered from child-bed fever instead of the much less dangerous skin disease.

Allow me to offer in support of this theory a few cases in which the poison which produced the attack of puerperal fever seems to have been directly referable to an acute attack of erysipelas of the skin, and *not* due to the poison of another puerperal case.

Case 1. Some years ago Dr. A. J. Stone, of St. Paul, was called to take the case of Mrs. R., who was just starting in confinement. *Mrs. Dr. Stone* had been ill for the preceeding 24 hours suffering with pain in the *back, face* and eyes, with rise of both temperature and pulse. Wednesday morning Dr. Stone delivered Mrs. R., the labor being normal, O. A. position, with no apparent injury to the parturient canal. Thursday Mrs. R. had a mild chill, but with no rise in temperature, accompanied however by profuse sweating. Had severe pains in back, side and head, and considerable nausea. Friday, another chill, but still no rise in temperature. Saturday severe chill followed by temperature of 105°, and on this day the lochia for the first time became scant and very offensive. Intra-uterine injections given regularly every every two or three hours for the next six days, and on the 10th day after delivery the temperature became normal and patient went on to a complete recovery. At this time there was *no* puerperal fever in St. Paul, and neither Dr. Stone nor his nurse had seen a case of this disease for over a year. Dr. Stone gave up the rest of his practice for the time, and attended solely to these two patients, Mrs. R. and his wife. He now feels that the attack of puerperal fever was simply puerperal erysipelas carried directly from Mrs. Stone to his patient Mrs. B.

Case 2.—I was called in consultation to see a case of puerperal fever by Dr. M., of St. Paul, who prefers to withhold his name. Dr. M. was attending a case of facial erysipelas when called on March 4th to deliver Mrs. D., of St. Paul. Labor normal, O. A. position. 48 hours after delivery Mrs. D. had a severe chill with a temperature immediately afterwards of 105° F., pulse 120. Chill every day. Lochia suppressed and rather offensive. When I saw the patient she was suffering from a well marked case of puerperal pyæmia. Examination showed slight tear of the perineum; lochia very scant and offensive. Temperature 103·5° F., pulse 130. Patient died on the 16th of March, having developed metastatic abscesses in left ankle and in lungs. The nurse had

not attended a case of puerperal fever for over a year. Dr. M. had not seen a case of puerperal trouble for over six months, and both had attended any number of confinement cases in the meantime, all of whom had recovered without a single septic symptom.

Dr. Ambrose Guichard reports a case bearing directly upon this subject in the *Archives de Tocologie*, July, 1885. Mrs. D. æt. 27, delivered for the 4th time, Jan. 17, 1885. Labor normal but rapid. Jan. 20th, patient had a chill, fever, diarrhœa, tenderness of abdomen, suppression of lochia, and became delirious. Despite antiphlogistic treatment and intra-uterine douches, patient died on Jan. 30th of general puerperal peritonitis. The husband of this woman, who occupied the same bed at night, had facial erysipelas when first seen by Dr. Guichard, eruption having developed three days before the delivery of his wife. The midwife who saw Mrs. D. immediately after delivery made no examination and had not been in any way exposed to puerperal fever.

Dr. Kucher. makes the following quotation from Tyler Smith: "In another case a medical man was in constant attendance upon a patient suffering from gangrenous erysipelas, and between Jan. 8th and Mar. 22d he attended the labors of ten women; all had puerperal fever, and eight of the patients died." This was in a town of moderate size; no other practitioners in the place were known to have had cases of puerperal fever. Several hundred similar cases are recorded.

Thus far in my review of this subject I have simply gone over the ground which has been so often argued *pro* and *con* throughout the medical world during the past few years. Now let me ask your attention to another phase of this subject. If the bacterial origin of erysipelas be *true*, *why is it* that certain persons seem predisposed to innumerable attacks of this disease? We have all seen many subjects in whom a slight indisposition brought on an acute attack of erysipelas and almost *always* located in the same area of skin surface, and these attacks *without* apparent exposure. Is not the answer to my question, that the first attack of erysipelas has never been *cured* and that the bacillus still *lives* in the skin ready to break out into a fresh attack upon the slightest provocation? It seems to me that this must be the answer, *for*, the cases of predisposition, of which every text-book speaks, and which we have all seen, are too numerous to allow of the *supposition* that each one of them has been repoisoned. If you grant me this then you must agree with me in the belief that a person who has suffered from an attack of erysipelas, and in whom the disease is dormant, or never has been cured, can communicate the disease to *an open* wound or to a puerperal woman.

I have among my records a few surgical cases which seem to allow of such an explanation.

Case 1.—Mr. W., operated upon at St. Joseph's Hospital Dec. 7, 1886, by Dr. C. A. Wheaton, of St. Paul, for the removal of a large sarcomatous growth of the right thigh. Every antiseptic precaution was used both during and after the operation. Four days after the operation the patient had a chill, rise in temperature and developed erysipelas upon the leg, starting from the lower angle of the wound. There was no erysipelas in the hospital, nor in the practice of Dr. Wheaton or myself. The nurse, however, one of the *best* and cleanest nurses whom I have ever met, had suffered with facial erysipelas some few months previous; she has shown no signs of erysipelas since, but I have *no* doubt that she still has the microbe of erysipelas living in her face or scalp.

Case 2.—Oct. 4, 1886, Miss. B., operated upon by Dr. Millard, of Stillwater, Minn., at St. Joseph's Hospital, St. Paul, for the removal of a 40 lb. congenital perineal tumor diagnosticated to be *fœtus in fœtu*. The operation was performed in the new wing of the Hospital which had just been finished. She was placed in a room never before occupied, with new bed and bedding, no erysipelas being then present in any part of the Hospital. The patient was placed under the care of the same nurse of whom I have just spoken. This nurse had been performing the executive duties of the hospital for several preceding months, and was only placed upon duty on account of the enlargement of the service and the scarcity of assistants. The patient did remarkably well until the evening of the sixth day, when she had a severe chill. The next succeeding day she developed erysipelas in the wound, which spread from there to the buttock and thigh of the right side. She passed into a septic condition, from which she died on the 35th day, her physical condition corresponding very closely to that of a fatal case of puerperal septicæmia.

Case 3.—Occurred at the same time on the person of a young lady upon whom Dr. Wheaton had performed an Alexander's operation, and who was under the care of this same nurse; the wound upon the left side, which was almost entirely closed, seeming to be the starting point for the eruption which spread to the labia and inside of the thigh on the left leg. There was no erysipelas in the Hospital nor in the practice of any of the physicians who were connected with either of these cases. I have called the attention of both Dr. Millard and Dr. Wheaton to this theory for the causation of these cases of erysipelas, and they have both agreed with me in the strong probability, at least, of the truth of my explanation. In looking back it seems that ever since the attack of facial erysipelas in this nurse, now over three years ago, ever since that time erysipelas has followed her, affecting apparently without cause her surgical patients. Through the kindness of Dr. Beal, of St. Paul, I am able to present a number of puerperal cases which come in the direct line of argument.

Dr. Beal suffered from a very severe attack of facial erysipelas in the winter of 1885. In October, 1885, Dr. Beal delivered Mrs. G. of her first child. Breech presentation. I saw Mrs. G., in consultation with Dr. Beal, and applied forceps to the after coming head. The labor was normal in every respect. After examination showed laceration of cervix on the right side. On the third day Mrs. G. had a very severe chill, followed by a rise in temperature, vomiting, pain in the back, head, and abdomen, with suppression of lochia. Regular intra-uterine injections and

a stimulating treatment were instituted but Mrs. G. died 16 days after delivery of puerperal septicæmia. I never saw Mrs. G. after the night of her confinement; there was no other case of puerperal septicæmia in St. Paul, so far as I could determine at that time, and I had not seen in the meantime a single case of scarlet fever, diphtheria or erysipelas; still my next case of confinement developed puerperal septicæmia on the third day after delivery.

Mrs. O., æt. 21, primipara. Delivered Nov. 8, 1885. Labor tedious; head would not engage. 36 hours after the commencement of labor she was placed thoroughly under the influence of chloroform, forceps applied and the head brought well down onto the perineum. She was then allowed to deliver herself. Female child weighing 9 lbs. Slight tear of fourchette, not more than ¼ in. in depth. One hour after delivery, placenta not having come away after a thorough trial of Credé's method of expression and the patient being exsanguinated, the hand was thoroughly cleansed in bi cloride mercury solution 1-1000, and introduced into the vagina. Two fingers were introduced into the uterus and the adherent placenta removed. On the 3d day after delivery this patient developed a true case of puerperal pyæmia. Intra-uterine douches and stimulant treatment were of no avail, and she died suddenly on the 15th day from cerebral embolism. The fact that it was found necessary to introduce the hand into the uterine cavity in this case, will probably be sufficient explanation to many of my hearers for this attack of puerperal fever; but still there seems to be a strong relationship between these two cases. The same forceps used in Dr. Beal's case were used in this case. Out of 55 cases upon my obstetric records this is the only one whom I have delivered who has had the slightest septic trouble. In several of my cases just as serious operative proceedings have been found necessary, and in several the hand has been introduced into the uterine cavity.

In the spring of 1886 Dr. Beal had a succession of puerperal fever cases. The poison seeming to follow him so closely that he had at last to refuse to take any obstetric work. As he expresses it, "Every woman that I saw during that last three weeks had a chill on the third day whether I touched her or not." During all this time Dr. Beal used the most thorough and systematic antiseptic precautions: bi-chloride of mercury, baths, changing of clothes, use of nail brush and constant rinsing of the hands; but notwithstanding all this, nearly every woman had more or less puerperal trouble, with three fatal results.

Mrs. B., delivered April 2. O. A. position. Forceps delivery. The perineum was lacerated and was restored 5 hours after delivery by Drs. Ritchie and Beal. This patient had no trouble until the 9th day, when she had a severe chill, followed by a high tem perature, pain in the back, head und abdomen. Her child died in convulsions on this same day. The patient had a chill every day until the 16th, when she died of puerperal septicæmia.

Dr. Beal's next case was Mrs. H., who was in the 7th month of pregnancy. Mrs. H. nearly aborted at the 5th month. Her labor was normal. Upon the 2d day after delivery Mrs. H. had a very severe chill followed by a temperature of 105 F., pulse small and rapid. Lochia became scant, but not very offensive. Suffered from pain in abdomen and back, very tender on pressure all about the uterus. 3d day; chill followed by temperature of 105°. 4th day; chill in the morning, temperature kept rising all day until evening, when she died of puerperal peritonitis, intra-uterine douches having no effect whatever.

About this time Dr. Beal delivered Mrs. T. at full term, normal delivery, O. A. position. On the 4th day she was found to have temperature 102° F.; no chill. Pain in the abdomen; was tympanitic and nauseated. Suffered with a profuse diarrhœa. Lochia became scant but not very offensive. Until the 8th day patient slowly lost ground. Temperature ranging between 102° in the morning and 103 5° in the evening. Pulse high all the time. On the 8th day the patient discontinued all medicine at the suggestion of a midwife, and Dr. Beal did not see her again. A physician who was called just before she died (on the 14th day) diagnosticated puerperal pyæmia, finding abscess in knee and in the apex of one lung.

Besides these three fatal cases Dr. Beal had several other patients about the same time and just before he gave up taking confinement casee, who suffered from mild puerperal attacks. They had suppression of milk and decrease of lochia with rise in temperature, preceeded generally by a slight chill; all of these cases, probably 8 in number, recovered. Every obstetric case occurring in Dr. Beal's practice during this period had more or less trouble, excepting those cases which he delivered in the country. Whether by chance or not every case in which he had to take a drive into the country went through confinement without any trouble. After May, 1886, Dr. Beal refused to take any confinement cases for the space of nearly a year. At the end of that time he again commenced taking obstetric work, using every antiseptic care, but only to have another case of puerperal fever.

There are several points of particular interest in all these puerperal cases. The lochia, although suppressed, was not as offensive as in the majority of puerperal fever cases. Intra uterine douches did not wash away as much detritus, shreds, clots, etc., as is usual. The long drive in the open air seems to have been the means of preventing septic trouble in some of Dr. Beal's cases.

In conclusion let me review the main points of my argument briefly, presenting again my theory of latent erysipelas:

1. Several of the latest investigators in the field of bacteriology claim that the poison of erysipelas, surgical fever, and puerperal septicæmia or pyæmia is one and the same, and that they are to a certain extent interchangeable. That when the poison from any one of these diseases is placed in the paturient canal at the time of labor, it will produce a train of symptoms which have been until lately classed together under one heading, i. e., Puerperal Fever.

2. Erysipelas being a disease due to a bacterial poison with a tendency to recurrent attacks without a second exposure, consequently the bacteria must

be able to live in the apparently healthy skin for an indefinite space of time.

3. That the germs of erysipelas when living in this quiescent or dormant state, although they may not be able to excite an attack of erysipelas of the skin, may still under proper conditions produce either surgical or puerperal fever.

In the first part of my paper I have presented a few cases on one side of a still unsettled subject. In the last part I have offered a theory the truth or error of which time and careful investigation alone can prove.

If my words may only cause a little greater care and the consequent saving of one material life I shall feel that I am more than repaid.

A NEW METHOD OF PRODUCING LOCAL ANÆSTHESIA OF THE SKIN.

Read in the Section on Medicine, Materia Medica and Therapeutics, at the Thirty-Eighth Annual Meeting of the American Medical Association, June 7, 1887.

BY HENRY J. REYNOLDS, M.D.,

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Various means have been adopted for prodncing local anæsthesia of the skin, but heretofore none has been to any extent a success. Even cocaine, useful in most other tissues as a topical application, has absolutely no practical use as a local anæsthetic for the skin. Though local anæthesia of the deeper parts may also be produced by the method which I am about to describe, I am only prepared to speak of its merits from a dermatological standpoint at present, but am nevertheless satified that the tissues can in this way be anæsthetized to a sufficient depth to render the method applicable in many cases to general surgery.

As cocaine is the anæsthetizing agent, the method therefore relates only to the manner in which the drug is applied and its absoption induced. Electricity is the means employed for this purpose. Knowing that solutions of cocaine were not readily absorbed by the skin, and therefore produce no anæsthetic effect, Dr. Wagner, of Vienna, about a year ago made experiments, the results of which he afterwards (*Wien. med. Blätt.*, 1886, vol. 9, p. 161) presented to the Society of Physicians of Vienna in the form of a paper on that subject, with a view to ascertaining a more successful method of producing anæsthesia of the skin with this drug. He found that by saturating the positive electrode of a galvanic battery with a solution of cocaine, applying it to the skin and then applying the negative electrode a short distance from the positive, with a moderate current on, that successful anæsthesia could be produced. Since the publication of this article, though personally, as a rule, very skeptical regarding therapeutic innovations, I have been induced to make a number of experiments with the method, and to make frequent use of it in dermatological practice with quite a degree of satisfaction; and inasmuch therefore as I have in looking up the literature of the subject been unable to find any article touching upon the details or results of any personal experience with the method in this country, I feel justified in writing this article, in the hope that it may elicit discussion and the personal experience of others, and be the means of bring to the more general notice of the profession of this country a procedure which I deem of much importance in medical and surgical practice. So far as I am aware, in fact, no article on the subject has appeared in medical literature other than the one just referred to. With this apology, and without going into the details of my experiments, I trust that a brief description of the method and the results of my experience with it will be tolerated.

Battery, strength of current, etc.—I have used an eighteen cell McIntosh battery, but I think, in some cases, even a stronger current is necessary. For reasons not necessary to discuss at present the Faradic current will not answer; neither will the negative pole of the galvanic. The strength of the current must vary with the sensitiveness of the part, the size of the electrode, etc. It is always necessary to use strongest current that can be borne, which may vary all the way from four or five cells (of the McIntosh battery) to twenty-four, but for which no rule can be laid down, the only guide being the feelings of the patient and the experience and discretion of the physician. Where the skin is very dense, the part not sensitive to electricity, and the electrode large owing to the greater surface necessary to be acted upon, (which thereby renders the current more diffused, and hence in a sense not so strong) the current must be very strong, requiring perhaps 24 cells of the McIntosh instrument. The sponge on the electrode used for the solution should be of the finest and softest quality. When a strong current is used the irritation at the negative pole may be avoided by using a larger electrode.

Strength of solution.—In my experience the cocaine should not be used weaker than a five per cent. solution. It may vary, however, owing to circumstances, from a two to a twenty per cent. strength. Where the skin is thin and the part such as will tolerate a strong current, a two to five per cent. solution will answer. On the other hand, if the part be so sensitive that only a weak current can be employed, as in portions of the face, the solution to be effectual must not be less than a ten per cent. one.

Mode of Application.—Saturate the positive electrode with the solution and place it directly upon the part to be anæsthetized. Place the negative electrode well saturated with water on some point near by. A more remote point, as the hand of the opposite side, for instance, will answer, but it will take longer time and a stronger solution to get the effect than when placed near by. In working about the face I think it is better to hold the negative electrode in the hand than to apply it to the face near the positive, as in this way a stronger current will be better tolerated.

It is well for the operator to familiarize himself with the method by experiments upon his own person. The electrodes should be kept firmly pressed

to the skin, the positive being now and then moistened as required with more of the solution, and the negative with more water. If the negative produce much irritation it may be occasionally shifted to another place.

Time Required to Produce Anæsthesia.—This depends of course upon the location, the strength of the solution, the strength of the current, etc. In the skin of the flexor surface of the forearm, if the negative pole be applied near by, a five per cent. solution with about ten cells, say, of a McIntosh battery in good order, will produce profound anæsthesia in five minutes. If the negative pole be placed in the hand of the opposite side about double that length of time will be required. Whenever the skin is dense a longer time, stronger solution, and stronger current are necessary. In any case, the current should be allowed to run as described till anæsthesia is produced, as ascertained by gently pricking now and then with some sharp instrument.

Duration of Anæsthesia.—This of course varies more or less also with the circumstances; as a rule however, the effect is rather transitory, lasting perhaps from five to fifteen minutes.

Results in Practice.—In the operation for the removal of superfluous hairs from the face by electrolysis, I have frequently used it. In this operation, inasmuch as the tissues still conduct the current, an ordinary electrical sensation is experienced by the patient, but the sharp stinging, burning pain at the site of the needle, sometimes so acutely felt, is when the method is judiciously employed, entirely done away with. In the removal of small warts, nævi, etc., from the face by the knife, it is even more satisfactory. One obstacle in the way of its successful employment in certain portions of the face is the extreme sensitiveness of the part, owing to which condition a sufficiently strong current can not always be tolerated to induce the necessary absorption of the drug. In a case of felon of the palm at the junction of the middle finger, I made a very careful effort with a ten per cent. solution and sixteen cells of a McIntosh battery, to produce anæsthesia previous to lancing. In this case the method as I employed it was not a success. Failure in this case would be obvious for the following reasons: *First*, the skin was very thick and callous; *second*, owing to the extreme soreness, not sufficient pressure with the electrode could be made to get the full benefit of the current; *third*, I think under the circumstances the current was not nearly as strong as it should have been. In dental surgery I think the method can also be used to advantage. I applied it in one case for Dr. W. H. Gale, of this city; the patient was a lady for whom two teeth were extracted. It is, of course, impossible to determine in such a case exactly how much benefit is desired from the procedure, but as nearly as could be ascertained, the pain in this case from the extraction was comparatively insignificant. Ten cells of the McIntosh battery were used with a ten per cent. solution.

From the foregoing it will be seen that while under favorable circumstances complete anæsthesia of the skin may be in this way produced, like everything else, with our present knowledge of the method, it is not under all circumstances all that could be desired. Notwithstanding, it has unquestionably, sufficient merit to warrant its recommendation to the profession and its general adoption by those in dermatological practice especially, and I am satisfied that with further experience, more, extended observation, improved appliances, and the more general adoption of the method, many of these apparent obstacles may be overcome.

In conclusion I may summarize as follows:

1. Complete anæsthesia of the skin may, under the proper conditions, be produced by cocaine applied in conjunction with the galvanic current.

2. In dermatological practice, the method, which, for want of a better name, I may term "cocaino-galvanism, galvano-cocainism or galvano-cocaine anæsthesia" is the best means for the purpose at our command.

3. In dermatological practice, it is preferable to the hypodermic injection of the drng inasmuch as it is painless and frequently more effectual.

4. The cocaine should not be used in less than a five per cent solution.

5. The current should be as strong as the idiosyncracy of the patient and the sensitiveness of the part will permit.

6. It is advisable in becoming familiar with its use for the physician to make some experiments upon his own person.

7. All things considered, I think the method should be commended for general adoption in minor operations by those in dermatological practice.

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DISCUSSION.

DR. SMITH, of Iowa, had used a hypodermic injection in removal of tumors.

DR. G. W. MCCASKEY, of Indiana: Hypodermic injection can be used in surgical cases but is not necessary in all cases. We cannot give electricity as accurately as we can cocaine. Chloroform has been similarly used, but sometimes leaves an eschar. Neuralgia of an intractable form has been cured by a hypodermic injection.

DR. FRANK R. FRY, of St. Louis: I have experimented in applying cocaine. I get best results by first washing the skin, and sponge well. I do not use a sponge electrode but a small pad of muslin. After using a small electrode I was led to use a large lead one, made in the shape of a band around the arm, protected by the muslin pad. I put a pad of absorbent cotton soaked in a solution of cocaine, 10 per cent., for the negative electrode. I have vesicated the skin previously. Some patients can bear more than others.

DR. H. N. MOYER, of Chicago: The action of cocaine is most resisted in superficial layers of epidermis. We should use some neutral salt with cocaine, as we wish to aid passage of the cocaine through the animal membrane.

DR. H. J. REYNOLDS, of Chicago: I did not mean that hypodermic injections were more useful than this method in superficial operations. As a local

anæsthetic topically cocaine is not so useful. Sebaceous matter may prevent absorption; hence we may use an alkaline wash. The galvanometer is imperfect. If we use a large electrode the current is diffused. We do not use very powerful currents in this affection. Where the skin is very sensitive the amount cannot do much damage, and the feelings of the patient are sometimes a good guide.

DR. M. R. CRANE, of Vermont: I have scraped off the scarf skin and had good effects with 8 or 10 per cent. solution of cocaine. Patients do not object to this scraping. The same size of electrode causes different effects upon different persons.

AN UNAVOIDABLE DEFORMITY AND DISABILITY WHICH FOLLOWS CERTAIN CASES OF OUTWARD DISLOCATION OF THE FOOT.

Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association, June, 1887.

BY E. A. WOOD, M.D.,

OF PITTSBURGH, PA.

The dislocation outward of the foot at the ankle-joint is, in certain cases, followed by deformity and disability defined as follows: Enlargement of the distal end of the tibia, increased prominence of the internal malleolus, increased malleolar space, turning of the foot outward, the axis of the foot presenting outside the axis of the leg, tenderness in and about the joint, pain when weight is borne on the foot, and inability to walk unaided.

The difficulty is often attributed to "weakness," to incomplete reduction of the luxation, to too early exercise, to neglect or ignorance on the part of the surgeon, to neglect or carelessness on the part of the patient. The blame is not always placed where it rightly belongs, and that this may be done hereafter is the object of this paper.

If the nature of the trouble is not comprehended the patient will lay the blame on the surgeon, while the latter must feel embarrassed with doubts. No more annoying dilemma can be conceived of in the practice of surgery, than where the surgeon cannot explain nor the patient comprehend the true character of a deformity and disability like the one under consideration. Ignorance on one side or the other is always the cause of suits for malpractice.

I have never known the deformity to exist except in cases of outward dislocations of the foot at the ankle-joint. In simple dislocation of the foot outward, the foot is rolled outward, and carried outside the axial line of the leg, carrying with it the external malleolus; the tibio-tarsal ligaments are completely ruptured, and the external malleolus forms a tumor which may touch the floor should weight be borne on the injured limb.

This, briefly, is the common dislocation, which is readily reduced, easily kept in place by suitable dressings, and which recovers without deformity or disability. But suppose we have this simple luxation *plus* something more; suppose a person of heavy weight falls from a considerable height with such force as not only to dislocate the foot outward, but also to drive the end of the tibia against the ground or floor, where it receives all the weight of the body and the impetus of the fall; then it is obvious that we have something more serious than a dislocation. That something more serious will be an injury to the distal end of the tibia in the shape of a severe contusion, or a split in the bone, or an impacted fracture, or all combined. The tissues of the tibia and its articular surface will be severely injured.

But in a case like the one presented the luxation is the most apparent, as it is the all-absorbing lesion; the displacement is readily reduced, or perhaps it was reduced before the arrival of the surgeon who is to treat the case, and the most serious injury, the injured tibia, is lost sight of. The dislocation is patent, the injury to tibia obscure. The foot is out of place; there is no alteration in the outline of the tibia, and all pain and shock is attributed to the wounded ankle-joint. There is no trouble in reducing the dislocation or in keeping the parts *in situ*.

In the case under consideration it is not the dislocation, but the obscure injury of the tibia, that is the cause of the subsequent deformity and disability. An uncomplicated outward dislocation of the foot, if fairly treated, will get well in a reasonable time, and get well without deformity or disability; a severely injured tibia will likely result in inflammation with its consequences, as thickening of the periosteum, interosseous deposit, thickening of the articular cartilage, hypertrophy.

In outward dislocations of the foot complicated with severe wounding of the distal end of the tibia, there will likely follow inflammation and enlargement of the part inflamed. This enlargement will be not only circumferential, but longitudinal as well. Bear in mind that, while the ruptured tibio-tarsal ligaments offer no resistance to the encroachment of the elongated tibia on the joint space, thus shoving the astragalus before it, on the other side the fibulo-tarsal ligaments, by being intact, firmly prevent the outer side of the foot from receding. The result of these two opposing forces—the elongated tibia and the intact external lateral ligaments—will be the rolling of the foot outward.

Another cause of the deformity is the enlargement of the circumference of the tibia, by which the intermalleolar space is increased. Now, as the fibulo-tarsal attachment is firm, while the tibio-tarsal is loose, the foot will be carried along with the lower end of the fibula outside the axis of the leg. The astragalus cannot fill the abnormally widened intermalleolar space, and, being firmly attached to the fibula, it must cling closely to that bone, and leave a space between the internal articular facet of the astragalus and its articular surface on the internal malleolus. Besides, the thickened articular cartilage of the tibia will have changed the plane of the joint.

Can the deformity be prevented? It is not a question pertaining to the dislocation, but one relating to an injured tibia; then, can the enlargement of the tibia be prevented? Whatever of uncertainty there may be in regard to the question of prevention, it is certain that timely and protracted treatment is nec-

essary, and that by such treatment we confine the deformity to its minimum.

Let us take for consideration a case of outward dislocation of the foot complicated with severe injury of the end of the tibia. Let us suppose that it is at the end of the third or fourth week. No trouble was had in reducing the luxation nor in keeping it in place. There was no manifestation of the latent mischief, except more pain and feverishness than usually attend simple dislocations. But at the end of three or four weeks the surgeon, on removing the dressings, notices that the internal malleolus is more prominent than it should be, that the foot inclines to roll outward, and that the foot is slightly outside the axis of the leg. He may also notice that the ankle is more swollen, tender and painful than usual in ankle dislocations. These features, however, are but slight, and unnoticed by the patient, and indicative of a tendency to rather than actual deformity. The surgeon is apt to attribute them to faulty dressings, and accordingly he adjusts these to overcome the slight deformity or tendency to deformity. At the next dressing the surgeon learns that he has not succeeded, that the trouble persists, or is even increased, and he again adjusts the dressings to overcome the trouble; but weeks roll round and the deformity becomes more pronounced. If the surgeon be a keen observer he will have learned by this time why the trouble persists; he will have discovered that the lower end of the tibia has enlarged, and that the intermalleolar space has widened. He could not prevent all deformity if he would. No justifiable force would bring the malleoli close enough to clasp as they should the articular process of the astragalus.

After two or three months, during which time special efforts have been made to prevent the threatening deformity, the dressings are finally removed and the patient left to himself and a cane. At this time the deformity is not great, *but the tendency to deformity is very great*, and the disability of the joint is almost total. The special dressings have held the deformity in check, but all dressings removed and weight borne upon the injured ankle, and the ruin at once becomes apparent even to the patient and his friends. So slight, apparently, was the deformity when the dressing were left off at the usual date in dislocations, that the inexperienced surgeon will incline to believe that rest and splints have done all they can do, and that exercise will complete the cure of the injured joint. Fatal mistake! It is of the utmost importance that rest and splints should be continued. In no other way and by no other means can we keep the deformity and disability within their smallest limits. A steel support reaching from foot to knee, as in *talipes valgus*—a deformity our case much resembles—should be constantly worn when out of bed. Under no circumstances should the injured limb be subjected to weight unless the ankle is supported by an efficient splint, and this adequate support must be kept up until the tenderness, pain, and weakness have disappeared, which will certainly not be short of a year, and it may take two years.

But the inexperienced surgeon of our hypothetical case, at the end of two or three months, surrenders his patient to a cane and exercise. The patient begins timidly to bear some weight on the injured ankle. Even slight weight brings discomfort, but being a determined fellow, and being told that exercise will strengthen the foot, he bravely walks on the foot with the aid of his stick; but it is a limping, painful gait, growing more painful every day until the disability of the ankle is complete. In alarm he sends for his surgeon to "break the leg over." The removal of the sustaining splints and the bearing of weight on the ankle result in displacing a foot that was not tied in its place by internal lateral ligaments. What was only a slight displacement, but a great tendency to displacement, has by injudicious management become an ugly deformity and a painful disability.

CLINICAL NOTES ON THE TREATMENT OF PULMONARY DISEASES BY SATURATED VAPORS AT A HIGH TEMPERATURE.

Read before the Mississippi Valley Medical Association, at Crab Orchard, Ky., July 14, 1887.

BY G. W. McCASKEY, A.M., M.D.,

PROFESSOR OF DISEASES OF THE CHEST AND THROAT, FORT WAYNE COLLEGE OF MEDICINE, FELLOW OF THE AMERICAN ACADEMY OF MEDICINE, ETC.

The use of saturated vapors at a high temperature in the treatment of pulmonary diseases was made the subject of a paper presented by the author to the Section on Practice of Medicine, etc., at the late meeting of the American Medical Association, in Chicago. To that paper, which is published in THE JOURNAL of July 23, I must refer you for a full discussion of the principles upon which the treatment depends. The importance of the subject of topical medication of the lungs can scarcely be overestimated. The meagre successes which have heretofore crowned our efforts, instead of repressing the true spirit of scientific investigation, can only serve to spur it on to renewed attempts. The accessibility of the respiratory organs, although not so easy as at first thought might appear, is yet sufficient to fully justify the therapeutic methods in question.

The advantages of saturated vapors at 140° to 160° F. over other forms of medication, seem to me sufficiently apparent in the light of acknowledged laws and a considerable clinical experience. It is for the purpose of calling attention to this clinical experience, which was necessarily crowded out by the purely scientific discussion in the paper above referred to, that this subject is again presented. It is not my intention to offer a record of cases from my note-book, but rather to speak of the clinical methods and results in a more general manner. A little consideration must first be given to the technique of the special form of apparatus which my experience and experimental investigations have led me to adopt.

The apparatus, which I herewith present to you, is capable of holding at a complete degree of vapor saturation one cubic foot of air. This quantity will more than supply the respiratory volume for one

minute, however deep the respirations may be; and the same quantity can be heated and saturated in about that length of time, so that a uniform condition can be maintained. The only appliances required in addition to the vaporizer are a spray-tube and a compressed air cylinder. When the air in the vaporizer has been heated to the desired temperature, or while it is being heated, a dense spray is thrown in. This spray, entering the heated atmosphere, is instantly vaporized, and this whether it holds in solution volatile or non-volatile agents. So far as I know this is the first effort at a systematic and scientific application of saturated vapor to the respiratory organs by a mechanism which is constructed with a view to meet the physical conditions present. The dry and wet bulb thermometers furnish an accurate means of estimating the quantity of medicine held in solution in the vapor, even to the minute fraction of a grain; while the reduction of temperature which it undergoes in passing into the respiratory organs, in so far as that can be estimated, furnishes an accurate measure of the quantity deposited.

As I have pointed out in the paper already referred to, air saturated at 158° F. is more than 30 per cent vapor.; and assuming that the respiratory organs would cool it down to 113° F., it would deposit 69 per cent. of its contained vapor. These figures are not based upon hypotheses, but are simply mathematical statements deduced from incontrovertible and fully accepted physical laws. The condition of this medicine when deposited upon the mucous lining, is that of a liquid holding in solution the medicine contained in the original menstruum, and of precisely the same strength. There are no problematical factors or additions, as in the case of the steam atomizer, where the steam mixes in uncertain proportions with the pulverized solution. The secretion with which the mucous lining is constantly bathed is of course an obstacle to the local effects of the medicine. But this objection applies to all other methods of topical medication; and with even greater force than to this. If the deposit of vapor is kept up sufficiently long, the mucus must be correspondingly diluted and thinned, and the structures beneath rendered more accessible.

Whatever hypothetical objections there may be, however, to the local action of agents applied to the respiratory lining, they are completely refuted by the results of clinical observations. The rapid absorption of vaporized anæsthetics, along with many other facts, clearly proves that the mucus which bathes the bronchial lining is not such an impassable barrier as some would have us believe. Besides all this, let us not forget that the mucous glands, and consequently the mucous secretions, are entirely absent, not only from the alveoli and air cells, but also from the bronchial tubes of small size.[1] Consequently any agents carried into the small bronchial tubes finds no tenacious mucus, or any other kind of mucus to guard the structures beneath.

The sensations of the patients, in so far as these can be trusted, are proof of the deep penetration of the vapors, if any proof were needed. A feeling of warmth pervades the entire chest; its intensity depending upon the temperature of the vapor, together with the depth and number of consecutive respirations. Occasionally considerable coughing is produced. But in the large majority of patients toleration is soon established. Also in some patients a sense of suffocation is produced by the vapors of higher temperature, which can not be overcome. One or two patients could not respire above 130° or 135° F.

The quantity of spray required for each treatment is quite large. About ℥iss–ij of solution will be converted into spray and vaporized for each treatment of ten minutes' duration. I use an air-pressure of about 15 lbs., and keep the spray going during about one-half or two-thirds of the time of the treatment, relying, of course, upon a comparison of the thermometric scales as to the completeness of saturation. So long as the wet bulb thermometer stands as high as the dry, no additional spray is required, as it would simply fall to the bottom, the air being already charged to the fullest extent possible.

My experience has been principally in the treatment of phthisis and bronchitis, in both of which diseases I have used pneumatic treatment in combination with the saturated vapors. My opportunities for comparison extend over a period of about fourteen months, during which I have treated about sixty cases. Increased intra-pulmonary pressure has been used in nearly all the cases, and a comparison can only be made under similar conditions between the use of the vaporizer, and simple spray or the steam atomizer. As regards sprays at ordinary temperatures, I have no hesitation in pronouncing them comparatively inefficient in lesions of the deep respiratory passages. I do this from both theoretical considerations and practical observations; and with a full recognition of their value, and, indeed, their superiority in laryngeal and tracheal inflammation. Aside from their failure to adequately reach even the deep bronchial structure, sprays have a very objectionable feature in the treatment of lesions located here, in their profuse deposit in the mouth and throat where they are not needed.

The steam atomizer fills the indications much more completely, but lacks in the very essential elements of precision, and complete control, both as regards strength of medicine used, and temperature of application. The steam atomizer, although much superior to the ordinary spray, can not be made effectually to do the work of the "vaporizer."

I have lately been using a 1 per cent. solution of carbolic acid in the treatment of phthisis and the purulent stage of bronchitis. Although it is not open to demonstration, and therefore must be asserted guardedly, yet I am very fully convinced that the vapor, aided by the mechanical effects of increased air-pressure, does penetrate, and is deposited upon, the walls of patulous tubercular cavities. The modification of secretions and of general symptoms can scarcely be explained upon any other hypothesis; besides which the physical laws and conditions are such as to fully justify this explanation.

[1] Landois, vol. 1, p. 220; Frey's Histology, p. 450.

A variety of other agents has been used, especially $HgCl_2$, 1-1000 to 1-2000; but I think the best results have been obtained by the use of carbolic acid.

In the treatment of laryngeal affections I do not think that saturated vapor offers any advantages over the common spray or steam atomizer. The quantity of medicine deposited in the larynx is probably not so large as it would be with the spray or steam atomizer; but I think that theoretical considerations and practical results justify the conclusion that for the deep portions of the respiratory tract it is greatly superior to these or any other method with which I am acquainted.

With the combined effect of pneumatic treatment and saturated vapors, I have seen expectoration diminish and the pathogenic organisms of phthisis grow less and disappear. I do not mean to say that this has been the rule; for with this or any other treatment at present known the arrest of advanced phthisis must be the exception, and a fatal termination the rule. But I think that a method of treatment which appeals so strongly to our judgment through our knowledge of physical laws, is at least entitled to careful and thoughtful consideration.

In many cases of intractable bronchitis the results have been so signal as to remove all doubts, in my own mind, regarding the superiority of this method. These patients have been treated almost to the exclusion of the whole list of nauseant expectorants; the principle effect of which, in my opinion, is to disturb digestion and destroy appetite. There is an *a priori* absurdity in mixing a teaspoonful of an expectorant mixture with some fifteen or twenty pounds of blood, as is done after absorption, and then expect a tangible result upon an extensive inflammatory process involving almost the entire bronchial lining. The dose, when it reaches the lungs through the laboratory of the portal circulation, has reached so many "dilutions" that it ought to satisfy the views of Hahnemann's most ardent disciples. While very far from denying internal medication a legitimate place in the therapeutics of pulmonary disease, yet I would make it as subordinate as it is acknowledged to be in the treatment of other inflammations as accessibly located as these. When dealing with a cystitis or pharyngitis, or even a gastritis, we do not rely upon the introduction of medicinal agents into the circulation, from thence to reach the seat of morbid action by a circuitous route, and in infinitesimal dilution. But we apply our remedial agents to the diseased focus by means of the catheter, the gargle or probang, and the siphon tube or stomach pump. Constitutional measures are not neglected, but they are not relied upon as the principal method of treatment.

The future, nay I believe the present therapeutics of certain pulmonary diseases must rest upon this basis of local therapeutics, backed up by such constitutional measures as will improve nutritive processes in general, and consequently those of the lungs in particular.

Ft. Wayne, Ind.

CEREBRAL SOFTENING; WITH REPORT OF A CASE.

BY C. N. BLOUNT, M.D.,
OF HAGERSTOWN, IND.

Daniel N., aged 52, carpenter, twenty-five years before his last sickness was suddenly attacked with a severe convulsion. There were no premonitory symptoms, excepting that for a little while before he stammered in attempting to talk. He had about twenty convulsions in all. The paroxysms were very severe, occurring sometimes once or twice a day, and then a day or two would intervene before their return, and thus continuing until they entirely ceased in a short time. There was no tendency to a return of the convulsions until his last sickness. There was no paralysis except aphasia for a short time. He was an invalid, however, for about a year, when he was sufficiently restored to resume his trade, which he continued during the intervening years till his last sickness. He did not seem in any way different from his former self excepting a loss of memory. His wife thinks that his memory was more defective in every way than before the attack, but especially in remembering where he had placed anything he had been using.

There was a small tumor on the back of his head, which gradually grew during these years to a diameter of three inches. He occasionally complained of severe pain in it. It was there long before the above-mentioned attack.

In April, 1885, the tumor was removed by the knife. After the operation he continued at work until October, when he was compelled to give up. His wife thinks, however, that he was never well after the operation. He was peevish, fault-finding and very irritable, becoming very angry at little things. He now frequently complained of headache, which daily increased. He would sometimes say that the old pain was in the back of his head, and would think that the tumor was returning. For a month or more before he took to his bed, he was very much indisposed. He acted strangely, slept badly, was feverish at night, complained of numbness of limbs, was costive. There was no nausea, and his appetite was good all the time. He persisted in being at work up to October, 1885, when he had to take his bed.

He occasionally had slight convulsions during October, November and December. Sometimes during the summer he would forget words, but this was now much more noticeable. Most of the time during his sickness he had hemiopia; a few times he had diplopia. He spoke of this last trouble only on two or three occasions, but the hemiopia was rather persistent. There was a gradual failure of both physical and mental forces until he was a complete physical wreck and demented, taking no interest in anything. During the latter part of his sickness there was partial paralysis of the right side, more marked in leg than arm. There was also paralysis of the tongue and muscles of the pharynx. This was very distressing during the last two months of sickness. He could scarcely speak or swallow. He became very much emaciated, and died in April, 1885, about one year after the removal of the tumor.

Dr. Buntin and I made an autopsy in the presence of Drs. Moore and H. C. Boyd. On removing the calvaria the brain appeared a little flattened, the cortical vessels were much enlarged, giving the surface a pinkish color. Having loosened the brain and lifted it from its bed, on inspection it did not seem to be extensively diseased. The cortical portion of the posterior lobe seemed thinner and much paler than that of the other lobes. On separating the hemispheres we found the entire covering a thin shell not more than one-fourth inch in thickness. The brain tissue of each hemisphere was softened to about the consistency of custard, and was of a grayish-white appearance. There was not any healthy brain tissue in either of the hemispheres, but the entire cerebral substance was softened and broken down. The cerebellum was healthy, save that at a few points it seemed to be softening.

Edes, in Pepper's "System," says: "A general softening of the whole brain does not and cannot occur, since a vascular lesion sufficient to cause anæmic necrosis of the whole brain must cause death before softening would have time to take place." Here was a case in which the blood supply was cut off from both cerebral hemispheres and softening did take place throughout the entire cerebral portion of the brain, and the man lived seven or eight months, or perhaps twenty-six years, while this process was going on. We did not in this investigation examine the vessels as we should have done, but we know that they were completely plugged, for there was not a remnant of a vessel in all this soft mass of matter. If Edes included in his statement the cerebellum, of course he must be correct; but if he means the cerebrum alone he is mistaken, as demonstrated by this case. The left side of the brain is the one usually softened, because the vessels of that side are more readily entered by an embolus. The middle and anterior cerebral vessels are branches from the internal carotid, the posterior cerebral from the vertebrals. They are united by communicating vessels at the base of the brain, forming the circle of Willis. They make such a perfect anastomosis that if either trunk were obstructed by an embolus, thrombus, or any other cause, before the communicating branch is given off, the brain would still be nourished by means of this very wise anatomical arrangement. If, however, the obstruction should occur beyond the communicating branches in either vessel, that part of the brain receiving its nourishment therefrom must become anæmic and die, because these vessels do not anastomose as vessels in other parts of the body, and hence a collateral circulation cannot be established to nourish the portion of the brain thus deprived of its blood supply. If paralysis exists it is usually on the right side—the left brain being more frequently softened. The topography of the brain is so well understood that an expert can almost always locate the part of the brain deprived of its blood supply—but he cannot so readily differentiate the particular form of the trouble or character of the lesion producing the symptoms in a given case. My observation of such cases has been too limited for my opinion to be of much value. I saw the case reported about three months before death. Having the history given as above detailed, and reasoning from it, I was inclined to think that there was a tumor that had existed for a long time, and that it had produced the former symptoms, and that from some cause, it had not been growing until, on the removal of the external tumor, it took on new action and produced all the symptoms present. If that was not the condition, then I thought that beyond doubt there was much softening—which was found.

Da Costa says that there are no pathognomonic symptoms the presence of which would enable us to declare, without hesitation, that we are dealing with a case of softening of the brain, or the absence of which would justify us in concluding that it does not exist. Nothnagel says the diagnosis of hæmorrhage, embolism or thrombus cannot, in any given case, be unreservedly made.

MEDICAL PROGRESS.

Treatment of Burns and Scalds.—Professor Mosetig, during the last five years, has treated with iodoform forty-eight severe cases of burns and scalds with the most satisfactory results. The danger of iodoform-intoxication in burns, he believes, is merely theoretical, as neither he nor others who treated burns with iodoform had, when using certain precautions, ever met with bad concomitant effects. The action of iodoform is twofold—it is both analgesic and antiseptic. The patients, according to Dr. Mundy's experience, which Prof. Mosetig fully confirms, obtain ease a few minutes after the application of iodoform to their burns, and are soon fit to be moved. The patients, in Prof. Mosetig's wards, repose quietly and without pain in their beds; they recover more rapidly, with only moderate and consequently less exhausting discharges, and with smoother cicatrices, than those differently treated; and if there is no possibility of saving the life, euthanasia at least is procured. Iodoform, although inert against the dangers to life from oligocythæmia and the nervous shock, guards against the danger of sepsis.

Prof. Mosetig, differing from the majority of surgeons, uses iodoform in very limited quantities only. He either does not employ the powder at all, or when so in rare instances; he sprinkles it by means of an insufflator in very thin layers, only on those places where the integument has been burnt in its whole thickness, and has assumed a parchment-like appearance. As a rule he covers the injured parts directly with compresses of iodoform gauze, not prepared in the usual way, by thickly dusting the gauze with the powder, but by impregnating with an etheric solution of iodoform the purified gauze, which has previously been freed of grease. He proceeds in the following manner: After opening and excising the vesicles, and cleaning the burns with cotton-wool, which had been steeped in a ½ per cent. solution of table salt, and well pressed out, he covers the wounds with dry compresses consisting of several layers of iodoform gauze, prepared as stated above, of corresponding

size, which are exactly and smoothly laid over the whole surface of the injury. Over this an equally large or somewhat smaller piece of gutta percha tissue is placed, taking care that it does not form folds or creases. The whole is wrapped in a very thick layer of medicated absorbent cotton-wool which overlaps to a great extent the compresses, or, better, surrounds the whole limb or injured part of the body. This cotton-wool is finally fixed by several turns of bandages, which at the same time exert a gentle pressure. This simple dressing, which, moreover, has the advantage of taking up very little time, is allowed to remain, without being changed, as long as possible, *i. e.*, as long as cleanliness permits, and no rising of the temperature takes place.

The secretions from the wound drain off beneath the gutta percha tissue, and are taken up by the absorbent cotton-wool. Slight staining of the bandage is no sufficient indication for renewing the dressing, which ought to be permanent; in case of real imbibition and offensive smell, only the external dressing has to be removed and changed; the iodoform gauze, and the gutta percha covering, however, should not be interfered with.

In case, in the meanwhile, fever should set In, which betrays by its character septic causes, generally the demarcation and separation of the mortified part having commenced, or a retention of the secretion of the wound having taken place, the dressing must be removed, the abscess opened, and free discharge of the pus secured: the mortified shreds and the eschars must be removed by means of forceps and scissors. The new dressing is put on in the same manner as the first one.

The impermeable covering of gutta percha tissue is very essential, and ought never to be omitted, because the drying on and sticking to the wounds of the gauze, stiffened by the imbibed secretions, is always injurious, and may moreover cause, like a scab, retention of the secretion. The discharge may be allowed to dry in the external portion of the dressing, but never on the wound itself.

By the permanent iodoform dressing, the infection, both by the air and by contact, is prevented, and burns of the second degree, as a rule, heal under a single dressing; in burns of the third degree, aseptic separation of the eschar, with but slight secretion, frequently takes place, and even if the latter be not the case, the granulating surfaces heal in a far shorter time, and the cicatrization is smoother, more even, and altogether less disfiguring than in non-aseptic treatment.

In burns and scalds of the face the mode of dressing described will, of course, be impossible; instead of it an iodoform-vaseline ointment (1:20) is employed, and covered with a mask of gutta percha tissue. The ointment has to be daily renewed, and is always spread on to the thickness of a knife-blade. —*London Medical Record*, July 15, 1887.

SYMPATHETIC AFFECTIONS OF THE EARS.—DR. F. W. BENNETT says:

Two cases which have occurred recently in my practice seem to present examples of a sympathetic relation between the ears. The first was a man, aged about 25, who had suffered from deafness for several months. The hearing distance on either side was about six inches. On examination mucus was diagnosed as being present in the middle ear on both sides. I incised the membrane on the left side, and by syringing through a Eustachian catheter removed a considerable quantity of mucus. The hearing distance increased so more than two feet. To my surprise, there was a corresponding improvement on the other side; this latter was, however, only temporary, and had disappeared three days later. The left ear continued much better, but no further improvement occurred on the right side until I removed mucus by incision.

The second case is more interesting: A painter, somewhat anæmic, complained of recent deafness and pain on the left side, with constant humming on the right. On examination, I found a recent collection of cerumen on the left side, but nothing abnormal on the right. I syringed away a soft ceruminous plug from the left ear, when the patient said that not only had the deafness and pain gone, but the humming on the right side had ceased.

Possibly in the first case excitement, due to the unpleasant operation, so stimulated the auditory nerve as to render its perceptive power temporarily greater. In the second case, however, there was no excitement, no prolonged syringing was required, and nothing whatever was done to the right ear. I could not but conclude that the soft plug had sufficed, in the patient's anæmic condition, to set up irritation, causing pain on the same side and tinnitus on the opposite.—*The Lancet*, July 30, 1887.

INTRAVENOUS INJECTIONS OF ARTIFICIAL SERUM IN CASES OF ACUTE ANÆMIA.—The *Paris Médical* publishes an interesting communication of DR. PREGADINO concerning subcutaneous injections of artificial serum. The author experimented on a large number of dogs, which after considerable aud rapid loss of blood, revived after having had artificial serum injected into their veins. The saline injection, or artificial serum, is composed of 6 grammes of pure sea salt dissolved in 1 litre of boiled water, and then filtered. Before injecting, care must be taken to render the skin as aseptic as possible by washing with antiseptics. Thh injection should be made at a point where there is plenty of cellular tissue; from 20 to 30 cubic centimetres of liquid per dose. In all, the quantity injected must be about one-half of the quantity of blood lost. A slight massage aids the diffusion of the liquid. The syringe must be aseptic. The sensibility being deadened by loss of blood, there is not very much pain. The immediate results of the injections are renewed sensibility, cessation of contractions, and of cardiac pressure, followed by progressive return of vital manifestations. The process is simple, free from danger, and sufficiently rapid for acute cases. The author recommends its trial on the human subject.—*London Medical Record*, July 15, 1887.

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Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, AUGUST 20, 1887.

RELATION OF ERYSIPELAS TO PUERPERAL SEPSIS.

DR. A. MACLAREN, of St. Paul, in a paper appearing in another column, reports a number of cases of puerperal sepsis, alleged to be caused by erysipelas. His argument is, briefly: A woman is attended during a normal confinement by a medical man, who had been exposed recently to erysipelas or was himself the subject of the disease. The woman has puerperal fever. There is no epidemic of puerperal fever, at that time in St. Paul, possibly, not even another case. Ergo, erysipelas is the probable cause of the puerperal fever. It seems scarcely necessary to point out the fallacy in this mode of reasoning. Dr. MacLaren premises his paper by a statement of the Semmelweis[1] theory of puerperal fever,—that "Every case arises from the absorption of decomposing organic matter from lesions of the genital tract." He accepts this theory.

The possible sources of infection are well-nigh innumerable. Puerperal sepsis, itself, is only one cause, and its exclusion, when it is possible, does not, of course, eliminate all other sources of infection except erysipelas. The responsibility for infection attaches primarily to the physician and nurse. The nature of the antiseptic precautions—whether adequate or not—upon the part of these attendants, is not stated specifically by Dr. MacLaren. No logical conclusion with reference to the relation between erysipelas and the cases of puerperal sepsis, reported in the article under discussion, can be drawn. So far as Dr. MacLaren's argument is concerned, erysipelas may have caused the puerperal fever, or it may have sustained no causal relation whatever. The experience of the practitioner, mentioned in the paper,—"Every woman that I saw during that last three weeks had a chill on the third day whether I touched her or not,"—reminds one forcibly of Rutter's sad history, and the fetichism of the pious and venerable Meigs. The latter accomplished obstetrieean once remarked that Dr. Rutter was "merely unhappy in meeting with such accidents through God's providence." He also propounded the question, "Did he distil a subtle essence which he carried with him?"

The causal nexus between erysipelas and puerperal sepsis is a traditional belief especially among English and American observers. The best textbook[2] on the diseases of the puerperal period, in the English language, with which we are familiar, contains the following statement: "Many physicians still doubt or deny that diphtheritis or erysipelas can cause puerperal fever because they have seen diphtheritis and erysipelas in normal childbed. In diphtheritis we have a putrid wound in the throat, and in erysipelas a phlegmonous inflammation. The secretions of either affection may produce septic infection when brought in contact with fresh wounds of the same patient, and do not infect the system at the place of origin when the avenues to infection are closed." The view, thus clearly expressed, is doubtless the safest as regards practice, in the present state of knowledge. The statement, however, that the causal relation between erysipelas and sepsis, in general,—puerperal sepis, in particular,—has been demonstrated, is not true.

Regard, for a moment, a little of the recent literature of this subject. Volkmann[3] has emphasized the importance of clearly distinguishing erysipelas, as a disease *sui generis*, from the phlegmonous processes. Matthews Duncan[4] has shown by the London mortality records, 1848–1874, that puerperal fever is not an epidemic disease, in the true sense of that term, and that there is no coincidence in point of time between the prevalence of erysipelas and that of child-bed fever. Hugenberger[5] has pointed out the fact that erysipelas is a very infrequent complication of the puerperium. Out of 7536 puerperal women, in the Lying-in Hospital of Moscow,—1876–1877—erysipelas was observed once in every 500 cases, and

[1] Aetiologie des Puerperalfiebers, 1861, pp. 52, 103. Semmelweis demonstrated that child-bed fever was caused by (1) cadaveric poison, (2) discharge from carcinomata, (3) pus from a penetrating wound of the knee-joint. From these facts, he arrived at his universal proposition by a process of induction.

[2] Joseph Kucher. Puerperal Convalescence and the Diseases of the Puerperal Period, 1886, p. 208.

[3] Pitha-Billroth's Chirurgie,—Erysipelas.

[4] On the alleged occasional prevalence of puerperal-pyæmia and of erysipelas. Edinburgh Med. Journal, 1876.

[5] Archiv. f. Gynaek., Bd xiii, p. 409.

once in every 120 cases with fever. He has demonstrated its sporadic occurrence.

The discovery of the streptococcus of erysipelas, at a comparatively recent date, by Fehleisen, constitutes by far the most important event in the history of the development of the subject. Gusserow[6] holds that erysipelas and peurperal sepsis have nothing in common. He cites two cases of erysipelas, occurring during the latter half of pregnancy, as a purely accidental complication. The puerperium, in the first case was normal. The patient, in the second case, died a few moments after delivery. The autopsy (v. Recklinghausen) demonstrated that there was no trace of puerperal sepsis—the uterus and adnexa, pelvic peritoneum and connective tissues being normal. Lomer[7] refers to a case of *erysipelas faciei*, occurring in a woman, nearly at term. Labor was probably precipitated by the elevation of temperature. The body of the patient was not touched by any of the attendants, and the patient herself was obliged to cleanse the genital tract. The conditions were as favorable as possible for the production of puerperal sepsis by erysipelas. The puerperium was normal.

Gusserow narrates the history of a case of *erysipelas faciei*, occurring on the fourth day of the puerperium. The patient recovered, without a sign of puerperal sepsis. A second case was that of a woman, attacked on the eighth day of the puerperium with erysipelas, proceeding from a fissured nipple, who died seven days later. The autopsy revealed absolutely no trace of puerperal sepsis. All of these cases were evidently accidental complications of pregnancy and the puerperium, and they did not cause puerperal sepsis. This fact, however, does not demonstrate that erysipelas cannot cause puerperal sepsis. As remarked by Dr. MacLaren, "The clinical fact that a puerperal woman may have a localized erysipelas of the skin in some part of the body, and not have puerperal fever, is no proof that erysipelas cannot cause puerperal fever." In the paper mentioned, Gusserow cites nine cases of erysipelas, occurring in women who were already the subjects of puerperal sepsis. The clinical histories of these cases resemble in a general way those of the cases reported by Hugenberger. In these cases, of course, it is not possible to assume any causal relation between erysipelas and puerperal sepsis. Neither is it possible to conclude from these data that erysipelas cannot cause puerperal sepsis, or that erysipelas may not be a sequela of puerperal sepsis.

[6] Archiv. f. Gynaek. Bd. xxv, Hft. 2, p. 169.
[7] Zeitschr. f. Geburts. u Gynaek. Bd. x. Hft. 2, p. 384.

Gusserow has sought to demonstrate experimentally that erysipelas has nothing in common with puerperal sepsis. He inoculated six rabbits with pure cultures of the streptococcus of Fehleisen; in two animals, a small quantity of the fungus was placed free in the peritoneal cavity; in two, in contact with the wounded peritoneum; in two, in the subserous connective tissue. Negative results were observed—absolutely no trace of sepsis upon post-mortem examination, some time after inoculation. Control experiments—the injection of the micrococci into the skin of the ear, two rabbits—resulted in the typical development of erysipelas. Winckel[8] concludes from the observation of 42 cases of puerperal erysipelas that "puerperal erysipelas occurs in a definite relation to, and in intimate union with, puerperal sepsis, and that the former, as the latter, is a genuine wound infectious disease, arising through local infection with the chain-forming micrococcus, which can be inoculated alone or in connection with other micrococci."

Evidence, collected from clinical observation, pathological investigation, and experimental research, is totally inadequate, at the present time, to demonstrate the nature of the relation between erysipelas and sepsis in general—puerperal sepsis in particular. In the midst of this confusion of ideas, and in this conflict of opinion, it is wisest to assume that the nature of the relation is necessary and causal. Fortunately, however, the question exercises slight influence upon practice, since the adequate disinfection, instituted against known sources of infection, involves protection against erysipelas.

NEW YORK BUREAU OF INFORMATION AND THE MEDICAL CONGRESS.

To afford all possible aid to those coming from foreign countries to attend the International Medical Congress to assemble in Washington Sept. 5, a Bureau of Information has been formed in New York, composed of twelve or fifteen leading physicians, among whom are Dr. Wm. M. Smith, Health Officer, Dr. Joseph O'Dwyer, Dr. J. Lewis Smith, of New York, and Dr. Wm. H. Pancoast, of Philadelphia. The following circular in English, French and German has been sent to the European medical journals and is to be placed on all the incoming steamers until the time for the Congress to be in session. The circular is as follows:

"The 9th International Medical Congress will convene in Washington, on Monday, September 5th.

[8] Ueber das puerperale Erysipel., München, 1885. Jos. Ant. Finsterlin, p. 25.

Washington is 200 miles from New York, six hours by railroad.

"Foreign Steamers to New York land at New York or at Jersey City or Hoboken, opposite New York. The New York Bureau of Information have engaged a reception parlor in the Hoffman house, corner of Broadway and 25th Street. The Broadway car line, which is crossed by the car lines from the steamer landings, passes in front of the hotel.

"Rooms at the Hoffman House, which is conducted on the European plan, can be obtained through the committee at a reduction of 25 per cent. One or more of the Reception Committee will be in attendance between 2 P.M. and 4 P.M. each day, on and after August 20th. At other hours the Clerk of the Hotel will act for the Committee. Members intending to attend the Congress are requested to send their names in advance to the Reception Committee, Hoffman House, New York, so that the Committee can secure for them reduced hotel and railroad rates."

AMERICAN MEDICAL ASSOCIATION.—We are informed by the Chairman of the Special Committee having the matter in charge, that on account of impaired health and professional duties Dr. R. Beverly Cole, of California, has been constrained to decline the appointment to give the Address on General Medicine at the next Annual Meeting of the Association to be held in Cincinnati, May 1888, and the committee have secured a promise that the address will be delivered by Prof. Roberts Bartholow, of Philadelphia. This selection will give very general satisfaction, as it secures the services of one of the ablest exponents of Practical Medicine in our country.

RATES TO THE CONGRESS.—*Caution.*—Let all our readers who are interested in the railroad charges for those intending to attend the International Medical Congress to convene in Washington September 5, 1887, examine carefully the official statements over the signature of the Chairman of the Transportation Committee, J. W. H. Lovejoy, M.D., No. 900 Twelfth St., Washington, D. C., to be found in THE JOURNAL of July 23, p. 126, and of August 13, pp. 223–4, that they make no mistake by not complying with the terms for securing return tickets at one-third the ordinary rates.

ENTERTAINMENTS CONNECTED WITH THE NINTH INTERNATIONAL MEDICAL CONGRESS.—We are authorized to state that the more important entertainments, receptions, and excursions positively provided for and adopted in the Programme are as follows: Monday evening, Conversazione at U. S. Pension Hall, from 8 to 11 P.M.; Tuesday evening, Visit to the Corcoran Art Gallery; Wednesday evening, Receptions by the Citizens of Washington, from 8 to 12 P.M.; Thursday evening, General Reception and Buffet Banquet at U. S. Pension Hall, from 8 to 11 P.M.; Saturday afternoon, Visit to Mt. Vernon; and, finally, a magnificent Excursion to the Falls of Niagara, for the foreign members of the Congress and their ladies. The exact time of starting from Washington and other details of this excursion will be given in due time.

SUDDEN DEATH OF DR. WM. A. BYRD.—Dr. William A. Byrd, of Quincy, Ill., died on August 14, 1887, at Slater, Mo., to which place he had gone for a visit to his father. He is reported to have been attacked with sunstroke on the 13th, and survived only about eighteen hours. He was 44 years of age, and one of the most active and well known surgeons in that section of the State.

VACANCY IN THE ILLINOIS STATE BOARD OF HEALTH FILLED.—Governor Oglesby has appointed Dr. H. V. Ferrell, of Williamson county, a member of the State Board of Health, to fill the vacancy occasioned by the resignation of Dr. Geo. N. Kreider, of Springfield.

SOCIETY PROCEEDINGS.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-third Annual Meeting, held in New London, Conn., July 20 and 21, 1887.

(*Concluded from page 217.*)

DR. CHARLES A. OLIVER, of Philadelphia, read a paper on

THE EYE OF THE ADULT IMBECILE.

The following conclusions were offered:

1. The eye of the male adult imbecile is an organ which is capable of proper functional activity.

2. By reason of early mental incapacity, the ordinary appearances seen in the used eyes of the mentally healthy are lessened in due proportion to the amount of work given to the organ.

3. The eye of the imbecile, being practically an unused organ for close and careful near work, the distension of the globe and the elongation in its visual axis with consequent increase in index of refraction is almost intirely avoided; this being in direct ratio to use.

4. The want of these physical changes may be

considered as significant of a type of unused, healthy adult human eyes.

5. The healthy eye of the imbecile serves to teach us that the various conditions seen in the used eye of the mentally healthy must be considered as pathological changes, the representatives not only of general want of tone but of constant and frequent abuse of a delicate organ.

DR. S. D. RISLEY, of Philadelphia, reported

ADDITIONAL CASES OF HYPERMETROPIC REFRACTION PASSING INTO MYOPIA.

Thirteen carefully studdied cases in which the eyes with hypernetropic refraction had been observed to pass into myopia had been recorded in the annals of the Society. To day the author brought forward nine additional cases, making a total of twenty-two. In all these cases, the state of the refraction had been repeatedly demonstrated under complete paralysis of the accomodation. In every case there was well-marked retino-choroidal irritation with asthenopia. Insufficiency of the internal rectus was noted in three cases, in all of which tenotomy of external rectus was performed. In no case was emmetropic refraction observed at any stage of the progress. The condition seemed to pass from the shallow hypermetropic ball to the lengthened myopic eye by the turn-stile of astigmation. The most important measure in the treatment of these cases was considered to be the use of correcting glasses. When we consider the large number of cases which at the first present the same conditions as the cases reported and who have subsequently had no return of the trouble, we cannot but think that the group of cases now presented are only those in which the treatment has failed, and that without their correcting glasses a much larger number would have pursued the same history. A study of these cases has demonstrated to the author the importance of astigmatism when present in very low degree, as a factor in setting up those changes in the nutrition of the eyeball, which result in impaired resistance to even normal intra-ocular tension.

DR. SAMUEL THEOBALD read a paper on

THE PATHOGENESIS OF PTERYGIUM.

The generally accepted theory of Arlt that pterygium has its origin in a marginal corneal ulcer to which a tag of conjunctiva has become attached, he thought was untenable, because if this were its usual mode of origin, pterygium would be found approaching the cornea from every possible direction, since marginal corneal ulcers are not apparently more frequent in one position than in another. It is known, however, that such is not the case, but that pterygium is almost always situated directly over the recti muscles and that in a very large proportion of cases it is over the rectus internus. The more recently pro posed theory of Poncet that pterygium is due to the presence of microbes which tunnel their way under the corneal epitherium is open to the same objection, for this also assumes the existence of a precedent corneal ulcer. The view long held that conditions which tend to induce chronic hyperæmia of the conjunctiva favor the formation of pterygium, he thought was well established. Assuming that this view is correct are there reasons why localized hyperæmia of the conjunctiva should be of frequent occurrence where pterygium usually forms to the nasal side of the cornea? This was answered affirmatively. The close connection between the vessels of the recti muscles and those of the anterior portion of the conjunctiva was referred to, and it was pointed out that the determination of blood to these muscles might influence the blood supply of the overlying conjunctiva, and that this would be the case especially with the recti interni since they were the largest of the straight muscles, and in close relationship with conjunctiva because attached to the sclerotic nearer to the cornea border than any of the others. Abnormality in the distribution of the blood supply of the internal recti muscles and of the overlying conjunctiva, and more frequently still, disturbance in the normal relationship between convergence and accomodation, such as insufficiency of the internal recti muscles, the different varieties of ametropia. These were regarded as the usual causes of pterygium through the localized hyperæmia of the conjunctiva to which they give rise.

DR. THEOBALD also read a paper on

RECURRENT RETINAL HÆMORRHAGES FOLLOWED BY THE OUTGROWTH OF NUMEROUS SMALL BLOOD VESSELS FROM THE OPTIC DISC.

The case reported was that of a lady, 52 years of age, in whom menstruation had recently ceased. During a period of nine months she had suffered with recurrent hæmorrhages into the retina and the posterior part of the vitreous humor of one eye. The macula escaped serious involvement, and central vision was but little affected. The hæmorrhages were supposed to be due to thrombosis of one of the larger retinal veins. Finally, a nebulous outgrowth from the optic disc, extending forward into the vitreous humor for some distance made its appearance. This consisted of numerous small and nearly parallel blood vessels running from behind forwards and held together by semi-opaque tissue, the outline of which could be easily distinguished from the surrounding vitreous. When last seen this growth had diminished somewhat in size. The prognosis was regarded as regarded as favorable, the development of new vessels being looked upon as an effort of nature to repair the damage caused by the repeated hæmorrhages.

DR. O. F. WADSWORTH, of Boston: I have seen several cases of recurrent hæmorrhage partly retinal. but largely into the vitreous. In only one could I positively say that there was a development of vessels into the vitreous. The other cases have not been observed sufficiently long to show whether or not there has been a development of vessels. The case referred to was that of a man seen ten years ago when he was 35 years of age. When I saw him there was extensive hæmorrhage into the vitreous of one eye rendering the fundus invisible. This cleared up to a certain extent leaving portions of the retina clear. Then certain changes in vessels toward the periphery could be seen. The other eye showed a perfectly healthy fundus except in certain places

toward the equator, where there were several patches of peri-vasculitis. The hæmorrhages continued to occur in the affected eye. After a time there could be detected in the vitreous a nearly transparent membrane containing vessels, some of which could be traced back to the retinal vessels. Two or three years later, I again saw the patient. He had then been free from recurrences for a year or two. There were still some vessels in the vitreous, but not so many as previously.

Dr. H. Knapp: I wish to say a word with reference to treatment. The main point is not to fatigue the eyes, and to put them at rest early in the evening. A waitress in a New York family suffered from hæmorrhages every time the family gave an evening party. She was sent to the country and the hæmorrhages cleared up. She returned and served at an evening party and again the eye filled with blood. She has now given up service and for two or three months has had no trouble. The treatment consists in rest, and in avoidance of everything that would produce a dropsical condition of the blood.

Dr. G. C. Harlan, of Philadelphia, reported a case of

EMBOLUS OF THE CENTRAL RETINAL ARTERY.

The patient was a clerk, 52 years of age, in good general health. While reading in perfect comfort, a shadow suddenly appeared before the left eye and on closing the other, he could just distinguish large objects about the room, and in a few minutes sight was entirely gone. An ophthalmoscopic examination made the next morning, showed an extensive œdema of the retina, giving the whole fundus a grayish tinge; disc pale and its margins blurred; arteries very pale, although not much narrowed, and some of the smaller branches lost in the retinal œdema; larger veins contracted in places, particularly in and near the disc, but generally of full calibre; phenomenon of visible, slow continuous circulation of blood in bead like sections well marked in superior temporal artery and vein; macula occupied by bright red patch, oval in form with its long diameter horizontal, and several minute terminal vessels in its neighborhood enlarged and apparently isolated; two small dots of retinal hæmorrhage at outer margin of disc. The œdema increased decidedly for the first few days, and then gradually subsided. There was still a little remaining on the 19th day, after which the patient was not seen for three weeks, when the color of the fundus was normal. The visible circulation lasted only about a day and a half, disappear ing first in the artery. The veins refilled at their narrowed portions, and retained nearly their full calibre, while the arteries became paler and narrower until only the two main trunks could be seen and these showed white lines along their margins from perivasculitis. The spot at the macula gradually disappeared. The disc regained the distinctness of its outlines but remained dead white.

Dr. David Coggin, of Salem, Mass, read a paper entitled *Chronic Glaucoma.*

Dr. George C. Harlan read a paper on

DANGER TO IRON-WORKERS FROM THE USE OF OLD HAMMERS.

A hammer was shown from which a fragment had split off, injuring the eye of a workman. The constant concussion of the hammer causes it to assume a chrytsaline condition and become very brittle.

Dr. Myles Standish, of Boston, reported a case of

RETINITIS PIGMENTOSA TREATED ELECTRICALLY.

The patient was a woman 33 years of age, and was myopic—150 D. She had worn glasses since she was 17 years of age. When first seen, April 14, 1886, her sight had been failing for three years and for the last three months had failed very rapidly, so that she could not go on the street alone after dark. On ophthalmoscopic examination characteristic patches of retinitis pigmentosa were found in the periphery of the fundus of each eye. Her vision was R. E. $\frac{1}{40}^{2}$, L. E. $\frac{1}{50}^{2}$, and the fields of vision were limited to less than 20° in the vertical and horizontal axes. The only treatment has been the use of constant current, of such strength as could easily be borne. This has been applied once in five days during the last fifteen months. Her present vision is right $\frac{1}{30}^{2}$, left $\frac{1}{15}^{2}$, and the fields of vision have now vertical and horizontal axes of 70°. She now goes on the streets after dark with safety.

Dr. C. H. Williams, of Boston, read a paper on

ASEPTIC CATARACT EXTRACTION WITH IRRIGATION.

The author reported five cases of irrigation of the anterior chamber after cataract extraction with a .5 per cent. solution of chloride of sodium, as recommended by Dr. McKeown. Instead of a syringe, a glass tube was used, bearing two glass tubes blown in the side. One of these was drawn out to a fine nozzle that could be easily inserted into the anterior chamber; the other had a rubber tube and mouth piece attached so that the pressure of the stream could be controlled by the operator. The flask had a capacity of 50 cc., more than enough to complete any irrigation without removing the tube from the eye. The irrigating instruments and the 2 per cent. solution of cocaine were sterilized in the steam sterilizer, and this was not found to injure the anæsthetic properties of the cocaine. The other instruments and the dressings were sterilized by dry heat at a temperature of 150° C. In order to determine the efficacy of the solution of the biniodide of mercury used for the preliminary washing out of the conjunctival sac, some experiments with plates cultures were made at the laboratory of the Harvard Medical School, through the kindness of Dr. Ernst. An equal amount of the biniodide of mercury and the iodide of potassium were dissolved in water and added to 10 per cent. nutrient gelatine, to give a series of strengths up to 1 to 5000 of the biniodide to the gelatine. Ten days after exposure to the air of the laboratory for six and one half hours no growth of bacteria were found on any of the plates, although on the unprotected plates, exposed at the same time, there was abundant development of colonies of bacteria. Gelatine of the strength of Pana's solution (1–20,000) was then tried, and these plates

after four day's showed an average of 1.5 and 0.8 colonies of bacteria to the square centimetre of surface in the two series of plates, while on the unprotected plates the average was 10.5. For two of the cases of extraction a suture was passed through the piece of conjunctera above, and this held the wound well in apposition. All of the extractions were done without iridectomy, and a layer of iodoform was dusted on the edge of the closed lids just before applying the bandage.

DR. O. F. WADWORTH, reported a case of

CONGENITAL ZONULAR GRAYISH-WHITE OPACITY AROUND THE FOVEA.

The patient was a child 11 months old. She was unable to sit or stand, and could not hold anything in her hands. She appeared to take little notice of anything. Externally the eyes were normal. With the ophthalmoscope the discs did not seem to vary from the normal appearance. The macula was dark red and surrounded by a grayish white opacity. The remainder of the fundus appeared to be normal. There appeared to be some light perception. Five months later there seemed to be no perception of light. The disc was sharply defined, the central vessel small. The mother had had four healthy children. The fifth according to the history, had been sick in a similar way as the one under consideration. In all the reported cases some weakness of the general muscles was noted.

DR. WADWORTH also reported a case of

SEPARATION OF THE RETINA IN BOTH EYES WITH ALBUMINARIA OF PREGNANCY,—REPLACEMENT.

The patient was a married woman 7½ months pregnant. About the beginning of the eighth month œdema of the eye-lid appeared. This was soon followed by indistinctness of vision. The urine was loaded with albumin, and contained hyaline and granular casts. When seen by the speaker, there was a general separation of the retina in the right eye. In the left eye there was also separation of the retina but not so distinct. After consultation, it was decided to induce premature labor. This was done and a living child was delivered. Before the completion of labor a convulsion occurred for which bleeding was resorted to. The patient convalesced and vision gradually returned. When last seen, the discs were clearer. No separation could be made out in either eye.

Dr. B. Alexander Randall read a paper describing a case of *Coloboma of the Optic Nerve.*

Dr. F. Buller, of Montreal, Can., read a paper describing *a Peculiar Form of Granular Conjunctivitis associated with Ichthyosis.* Two cases in which this combination was present were reported.

AFTERNOON SESSION.

Dr. W. S. Dennett, of New York, exhibited an *Ophthalmoscope in which the Mirror was substituted by an Electric Light.*

Dr. Lucien Howe presented a small *Pocket Ophthalmoscope with Movable Disk.* Dr. Howe also exhibited several *Photographs of the Interior of the Human Eye.*

DR. EDWARD JACKSON, of Philadelphia, presented a set of

SMALL TEST LENSES, WITH A MODIFIED TRIAL FRAME.

The lenses are one inch in diameter and the saving in weight is from one-third to three-fourths of the weight of those in common use. The lenses are plano-convex and concave, giving advantages over the double convex and concave, by lessening spherical aberation, being easier to combine together and making it possible to neutralize more perfectly spectacle glasses the strength of which it is desired to test. Several lenses had been added to the series usually placed in such sets, including stronger concave sphericals and two astigmatic lenses, which had been found very convenient in testing for astigmatism. It was suggested that all intermediate lenses added to the metric series should be made to divide in half the present interval of one-fourth dioptry, making the interval one-eighth and preserving the simplicity of the system. Making the lenses smaller allows the trial frame to be made smaller, and very much lighter, so that the new frame with the new lenses weighs less than half the old frames with lenses of equal strength. The temple of the frame is attached to the lower part of the lens-holder, allowing the lenses to be placed in the back groove of the holder or withdrawn therefrom through the natural depression of the temple instead of across to prominence of the brow or cheek. The set and frames are made by Queen & Co., of Philadelphia.

Dr. S. D. Risley, of Philadelphia, described an *Ophthalmoscope with Cylindrical Lens.*

DR. SWAN M. BURNETT, of Washington, described a

MODIFICATION OF THE REFRACTION OPHTHALMOSCOPE WITH AN ATTACHMENT FOR USING CYLINDRICAL GLASSES.

The modifications of the ophthalmoscope which were offered by the speaker consisted *first*, in a clip behind the instrument into which the cylinders in the test cases can be inserted. The inclination of the axis is read on a graduation on the back of the mirror. The author had found the arrangement satisfactory in verifying the diagnosis of astigmatism made by other methods, and for examining the fundus of the astigmatic eye free from its anomalous refraction; *secondly*, the superposed disks containing lenses which singly and by combination give 47 numbers [22 plus and 25 minus lenses] with a regular interval of 0.5 D. up to 10.5 plus and minus; *thirdly*, a plane circular mirror with a concave tilting mirror swung in front of it. The plane mirror does not interfere with the tilting mirror when in use, and when it is desired to use the plane mirror alone the tilting mirror can be detached from its upper bearing and swung downwards out of way on its lowest bearing. The instrument is very light. It is made by Queen & Co., Philadelphia, and its cost is about $20.

DR. JOHN GREEN, of St. Louis, reported a case of

MYOPIA FOLLOWING IRITIS.

In 1867, the speaker had been the subject of iritis

involving both eyes. During convalesence, he noticed that the dimness of vision was not wholly due to lack of transparency of the media, and that vision was improved by the use of concave glasses. He had occasionaily observed in other patients with iritis that as they recovered vision was benefited by the use of concave glasses. Last April the speaker had iritis affecting the left eye. He was then able to compare the one eye with the other, and found that the myopia induced by the iritis amounted to 1.50 D. This gradually diminished until it disappeared at the end of four weeks leaving the normal refraction. He had been unable to find accounts of myopia as a transient symptom during convalescence from iritis.

EXECUTIVE SESSION.

The report of the Committe on a *Congress of American Physicians and Surgeons* was received, and the following resolution adopted:

Resolved, That the American Ophthomological Society appoint a representative, and alternate, to the proposed Executive Committee of Arrangements for the Congress of special Societies, with the proviso that in making the appointment this Society does not commit itself to an approval of the present sketch in all its details.

Dr. Wm. F. Norris, of Philadelphia, was elected Representative to the Executive Committee of the Congress, and Dr. D. B. St. John Roosa, of New York, was elected alternate.

OFFICERS FOR ENSUING YEAR.

President—Dr. William F. Norris, of Philadelphia.
Vice-President—Dr. Hasket Derby, of Boston.
Secretary and Treasurer—Dr. O. F. Wadsworth, of Boston.
Corresponding Secretary—Dr. J. S. Prout, of Brooklyn.

The following were elected to membership:

Dr. George Cutter, of Brooklyn; Dr. D. C. Cocks, of New York; Dr. H. S. Oppenheimer, of New York; Dr. Charles McIlvaine, of Trenton, and Dr. Daniel De Beck, of Cincinnati.

The next meeting of the Association will be held at New London, Conn., on the third Wednesday of July, 1888.

FOREIGN CORRESPONDENCE

PRAGUE.[1]

Gussenbauer; his Methods—Enlargement of Cervical Glands—Tuberculosis of the Cheek—Fistulæ from Osteo-Myelitis of Femur—Litholapaxy—Genu Valgum—Resection of Intestine for Gangrene—Chiari; his Work and Laborotory—Unique Skull.

Dear Dr. Fenger:—I arrived in Prague April 26, and at once sought Prof. Gussenbauer, who impressed me very favorably. He is about 44 years of age, and blessed with a vigorous, healthy constitution. His aspect and behavior indicate that he is a hard worker. He has charge of the surgical wards in the Stadtkrankenhaus, which contains 120 beds and affords a rich material for clinical teaching. Hardly a day passes but he performs two or more capital operations. He is a good lecturer and a splendid teacher. In his Klinik, when a case is shown, one of the assistants reads a short history, which is followed by brief remarks with special reference to a correct diagnosis by Gussenbauer. After all the material for the day has been presented the operations begin. The antiseptic solution for irrigation is a 1:1,000 solution of corrosive sublimate, and a 4 per cent solution of carbolic acid for the instruments. As a dressing for wounds a small compress of sublimated gauze is used, over which a copious dressing of dry aseptic hygroscopic gauze is applied, and the whole is covered with a cheap impermeable rubber cloth. I can only give you a very brief account of what I saw during my three days with Gussenbauer.

The first case was one of enlargement of the cervical glands on one side in a woman 40 years of age. The history showed that when she was a girl a few of the submaxillaries became swollen, and remained in this condition stationary for twenty years. Two years ago the same glands increased in size, and additional glands in the direction of the lymph current became involved. It was assumed that the primary enlargement was a simple hyperplasia, and that the recent progress was due to tubercular infection; in other words, the hyperplastic glands had furnished the soil for localization of the tubercle bacillus. The removal of the glands made a deep and very careful dissection necessary, as some of them were in close contact with the large vessels of the neck. The internal jugular vein was laid bare for three inches. Wherever it was deemed necessary the division of parts was made between compression forceps.

The second case was one of tuberculosis of the cheek in a man 50 years of age. The swelling had ulcerated externally, and where the skin had given way the surface was covered with flabby granulations. The mucous membrane of the mouth was closely attached to the swelling. The whole mass was rapidly excised, hæmorrhage carefully arrested and mucous membrane sutured, while the external large defect was covered with a flap taken from behind the ear.

The third case was that of a boy who had suffered from an acute attack of osteo myelitis of the lower end of the femur several years ago, and who now had numerous fistulous openings leading to the primary location of the disease. Numerous incisions were made down to the bone, but no central reservoir could be located, and the whole lower end of lhe femur appeared to be covered wlth fungous granulations which contained a number of small spiculæ of bone. The granulations were carefully removed with a sharp spoon, and the different cavities were drained and some of them packed with iodoform gauze.

The fourth case was one of litholapaxy in an old man who had been relieved and apparently cured by the same operator on two previous occasions. On measurement it was found that the stone measured 3 cm. Chloroform was administered, and the instrument for crushing was introduced four times, and each time a number of seizures were made and the evacuator removed a large mass of detritus. After

[1] By permission of Drs. Fenger and Senn.

the last crushing and evacuation the interior of the bladder was carefully explored, and no fragments could be detected. Towards the last a small lithotrite was used for seizing and crushing of small fragments. The whole operation lasted nearly an hour.

The fifth case was a genu valgum. I had seen so many cases of osteotomy for this deformity that I was very anxious to witness a bloodless procedure for the correction of the false position. Professor Gussenbauer has for a long time abandoned the cutting operation, and substituted for it the simple *redressement.* He showed me several dozen of photographs taken before and after treatment, and the final results certainly compare favorably with those obtained by osteotomy. The advantages of this treatment consist in an absolute safety against infection, and in requiring less time on part of the patient. After the patient is fully anæsthetized he is placed on his side, and the surgeon puts the limb upon his right shoulder in such a position that the convexity at the knee is directed upwards. With both of his hands he makes forcible interrupted pressure over the knee, and if his force is not adequate to correct the deformity one or more assistants help to increase the force. The straightening is gradually accomplished, and often attended by an audible noise caused by the rupture of ligamentous structures. The whole object of the operation must be accomplished at one sitting, and the proper axis of the limb must be completely restored. In the case I saw the deformity was considerable, and the patient otherwise a healthy young man. It required the combined efforts of the operator and his assistants to properly straighten the limb. After the operation the limb is at once secured in a plaster-of-Paris splint. After three weeks an interrupted plaster splint is applied, with hinge-joints on each side, and the patient is allowed to walk without the aid of crutches, Gussenbauer has never observed any unfavorable results after this procedure, and in ordinary cases confidently expects a favorable result. The patients are required to wear a lateral support for at least six months in order to prevent a recurrence of the deformity. I am satisfied that, in the milder forms of genu valgum and varum, this treatment is more applicable than osteotomy, and should always be tried before resorting to the more serious measure of causing a fracture.

Prof. Gussenbauer is justly proud of a case which he has now in the hospital in which resection of the intestine for gangrene resulting from strangulation was successfully performed. The abdominal wound is healed, the bowels move regularly and the patient can be considered entirely out of danger. Such a result must be a great satisfaction to the surgeon, and encourage him in the future to resort to desperate measures in desperate cases.

I had the pleasure of meeting the distinguished professor of pathology, H. Chiari, at the house of Professor Gussenbauer, where we spent several interesting hours around the dinner table. The next morning I witnessed an autopsy at the Children's Hospital and had an opportunity to see and hear how accurately the work is done. Prof. Chiari also showed me through the splendid laboratory and demonstrated many interesting specimens in the museum. Although a comparatively young man, Chiari stands in the front rank of German pathologists and the profession may confidently expect that through his energy and enthusiasm many new discoveries will be made. I also examined the splendid anatomical collection under the guidance of Dr. Rex, prosector of anatomy. This collection contains a unique skull. The cranial bones throughout are at least an inch thickness, perfectly solid, and the skull is so heavy that it seems to be composed more of stone than bone.

N. SENN.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Alvelos in Epithelioma—Physiological Effects of Massage—Duration of Life—Borax and Boracic Acid as Food Preservers and Antiseptics.

Several cases of epithelioma of the face and lips are claimed to have been cured with the juice of alvelos, a plant belonging to the family of the Euphorbiaceæ. It is said to act as an irritant and to destroy the diseased tissue, which was in each case quickly replaced by healthy granulations of the different kinds of alvelos, male, female and wild, the second is considered to be the most efficacious in this respect. The best results are obtained with the juice in a concentrated or solid form, like an extract, and with the addition of vaseline or tanoline. This preparation is applied with a brush to the affected part (previously washed with a two per cent. solution of carbolic acid), which is then left exposed to the air for at least one hour. It is afterwards covered with lint. The treatment is repeated every two or three days, but never more than once in the course of twenty four hours, as the pain is very severe. The treatment is more speedily successful when begun before ulceration has set in.

Dr. Eccles has recently given some interesting observations on the physiological effects of massage. Four distinct manipulations were described, and their immediate effects on the human tissues and functions as observed by Dr. Eccles in a series of experiments on healthy persons noted. *Effleurage* stimulated the skin muscles, produced dilatation of the superficial tissues and insensible perspiration, excited the skin reflexes, and, acting through the cutaneous nerves, increased the rapidity of the circulation and heart's beat. *Petrissage* forced the lymph out of the muscles, increased the velocity of the blood current through the part, temporarily decreased the size of a limb, and increased its muscular power. The pulse-rate was reduced, especially in abdominal kneading. *Massage* and *friction* produced the same local effects as petrissage and was peculiarly applicable to joints. *Tapötement* excited muscular contractions. The immediate and remote effects of massage as a combination of the above named manipulations were, that the texture of the skin was improved, the sense of locality was increased, the general body temperature was raised, and the free surface temperature of a part under

massage become higher than that of the rest of the body while abdominal massage decreased the surface temperature of the extremities. A course of massage of one month's duration increased the body weight, the appetite, muscles, strength and ability to sleep and work well.

Dr. W. Playfair is a strong advocate of massage as a form of treatment. He was one of the first to introduce massage prominently into notice in England as an agent along with over-feeding, and freedom from previous surroundings in the treatment of profound cases of neurasthenia or malnutrition, whose exact character we did not as yet thoroughly understand. Some of the cases which were commonly counted as incurable and were a curse to their families could, he thinks, really be cured by these means. He is indifferent what terms are used, but underlying mere criticism of the language there is apt to be a sneer at the treatment. The increase in weight in healthy men was remarkable. In severe cases of illness under his treatment, he is accustomed to see an increase of ten pounds or twelve pounds a week, and many patients ultimately double their weight. He has seen this treatment wrongly used in cases of locomotor ataxy and disseminated sclerosis, owing to his mistaken diagnosis, and he is anxious not to run a hobby too hard, so that he has only used massage in a few uterine cases with a view to replace exercise. Dr. Powell has published a remarkable case of a lady whom he had found, as he had thought, moribund, with the right lung riddled with cavities, a hectic temperature and profuse night-sweats. There was abundant expectoration, in which eminent bacteriologists could find no bacteria. He declined to attempt any treatment, and it was only after urgent pressure against his own wish that he did so. The results turned out to be the most remarkable he had seen, the cough stopped, the patient rapidly improved, and in two months and a half gained six stone and her lungs were practically recovered. Over-feeding he considers only possible when there was massage to take away the waste. Dr. Playfair protests strongly against the doctrine that the art of massage is a very difficult one and takes two years to learn. In his opinion, half a dozen lessons are quite enough, and any nurse who could not learn all that is wanted in that time was never likely to make herself useful at it.

According to Mr. Edwin Chadwick the mean duration of life during the reign of Queen Victoria has advanced from 30 to 38 years. The services of paid union officers save the country £3,000,000 annually. In France the death rate is 3 per cent. higher than in England, which means the loss of 112,000 lives more than at present in England. In Germany with a mortality in its army the lowest in Europe, the death-rate of the civil population is 6, in Italy 8, and in Austria 11 per thousand higher than here, which means in Germany a sacrifice of 135,000 lives yearly more than in England and in the two last countries of 624,000 lives annually over and above the corresponding waste of life in England and Wales.

The extensive use of borax and boracic acid as antiseptics, especially for the preserving of fish brought from the northern European fishing grounds to English ports, has just given rise to some special observations upon this subject, which are most interesting. Boracic acid has been given to several patients and then the turmeric test, which will detect one part in 2000 has been used, the spectro-electric tube of the French pharmacist, Vigier, has also been used. In twelve cases, in which the doses varied from twenty to fifty grains daily, toxic symptoms were observed after the largest doses had been taken, there was headache, vomiting and a feeling of malaise. In one instance after the use of borax for ten days, a slight acceleration of the pulse-rate was observed accompanied by increase of temperature, loss of appetite, redness of fauces, and bronchial catarrh, finally there was a well-marked papular eruption upon the thighs and joints. The urine commonly gave the reaction for borax ten minutes after the dose was taken, but it was not found in two days after the drug had been used by inunction. In other cases it persisted in the urine for six, eight or fourteen days after the patient took it. Boracic acid was found to have a decided diuretic effect, albumin disappeared from the morning urine in some cases where albuminuria existed. When the greatest diuresis was produced, the boracic acid itself disappeared. Borax was also found in the perspiration, saliva and fæces several days after ingestion. The observations do not tend to show the danger of the use of boracic acid and its compounds.

G. O. M.

BRITISH MEDICAL ASSOCIATION.

(FROM OUR SPECIAL CORRESPONDENT.)

The Meeting in Dublin.

One of the most successful meetings of this great Association has just been concluded, and the whole medical world has had representatives here to taste the genuine Irish hospitality, and enjoy meeting and communing with the eminent members of the profession here assembled. The number of members registered as being in attendance amounted to 904. The weather was most propitious, and Dublin was in holiday attire.

The president, Dr. Banks, delivered his address in the large Dining Hall of Trinity College, taking for his subject, *The History of Medicine in Dublin*, which he handled in a most complete and interesting manner. He spoke of the admission of women to the University as being obligatory, as the charter of the University is mandatory as written, and the Colleges of Physicians and Surgeons have thrown open their doors and afforded them every possible facility.

The various sections were held in Trinity College and were well attended. Many papers of great merit by noted members of the profession were read and discussed, but can not be mentioned here.

The address on Medicine was delivered by W. T. Gairdner, M.D., LL.D., Edinb., Physician in Ordinary to Her Majesty the Queen in Scotland; Professor of Medicine in the University of Glasgow.

His subject was, "*Has the Art of Medicine Advanced during the Present Century?*" In an able manner he reviewed the progress and history of medicine from the time of Hippocrates up to the present. As a proof of the greater stability of medical science in our day Dr. Gairdner adduced, namely, (1) The progress of preventive medicine. (2) The disappearance of orthodoxy. (3) The cessation of the abuse of alcoholic stimulation in disease. The paper though quite long was listened to with marked attention and was well received.

The address in Surgery was delivered by Edward Hamilton. M.D., F.R.C.S.I., Prof. of Surgery in the Royal College of Surgeons of Ireland, on, "*Tissue Resistance and Antisepticism.*" The whole of this able paper would have to be given in order to appreciate its important and valuable contents, which is impossible now.

The address in Public Medicine was given by the Rev. Samuel Haughton, M.D., Senior Fellow, Trinity College, Dublin, on, "*Reflections on Death-rate, with Special Reference to Dublin and its Suburbs.*" This was the most spicy and entertaining address delivered during the meeting. The solid important facts were frequently interspersed with the best Irish wit. The death-rate of Dublin is very high, ranging from 22.33 in July to 37.13 in March per 1000. This is owing to the great number of poor people who are crowded together in certain dietricts. Dr. Haughton showed that a change in temperature from 40° to 32° increased the death rate from 35.4 to 44.3 per 1,000. "What this means no one can tell better than the clergy and physicians, who know the sufferings of the Dublin poor in winter. The real cause of the high death rate in Dublin is the poverty of a large proportion of its inhabitants, which arises from causes quite beyond the control of the sanitary authorities. How much of this poverty is due to political causes, and how much to the people themselves is no business of mine to discuss. It is there and produces its deadly effects. However, we must not despair, but by repeated efforts on the part of all, do what we can to relieve the sufferings of the poor, and remove their causes. I would ask my Dublin friends always to keep in mind the answer of Simon Peter to the Divine Lord: 'Master we have toiled all the night and taken nothing; nevertheless at Thy word I will let down the net.'"

The social programme of the meeting was a prominent feature. The *soirée* given by the President of the Association and the Dublin Branch at the Royal University of Ireland on Wednesday evening was a brilliant gathering attended by 3,000 people.

Thursday morning a Breakfast was given to the members of the Association by the Irish Branch of the British Temperance Association. The Annual Dinner occurred in the evening at 7 o'clock at the Royal University, and was attended by the Lord Lieutenant of Ireland, escorted by a famous High land regiment. The Liverpool Band furnished the music.

On Friday, from 4 to 6, a Garden Party was given in the Fellow's garden, Trinity Colloge, by the President and the Dublin Branch.

On Friday night a conversazione was given to the members by Surgeon-General Hassard and Officers of the Medical Staff in the Museum of Science and Art.

Saturday was devoted to excursions which visited the Dublin Bay, the Water Works, Glendalough and Avoca, and the Boyne.

Thus came to an end one of the most successful meetings in the history of the Association.

W. H. H.

Dublin, Aug. 6, 1887.

INTERNATIONAL CONGRESS.

SECTION IV.—OBSTETRICS.

The following papers are annouced:

1. The Pathology and Treatment of Tubal Pregnancy, Mr. Lawson Tait, F.R.C.S., Birmingham, England.

2. Tubal Pregnancy, J. Veit, M.D., Berlin.

3. Operative Interference in Early Extra-Uterine Pregnancy, Michael O'Hara, M.D., Philadelphia.

4. The Alleviation of Pain during Parturition, Professor P. Zweifel, M.D., Erlangen.

5. The Normal Forceps, Professor Lazarewitch, M.D., St. Petersburg.

6. The Origin and Causes of Sterility in Women, Luigi Casati, M.D., Forli, 24 Via Bufalini.

7. Cæsarean Section, Professor Leopold, M.D., Dresden.

8. Conservative Cæsarean Section, M. Sänger, M. D., Leipsic.

9. In the Cases of Cæsarean Section, in which Porro's Operation is not Indicated, what is the Best Manner of Suturing the Uterine Wound? Domenico Peruzzi, M.D., Bologna, Via Mazzini 22, Italy.

10. The Prognosis of the Cæsarean Section, Professor William T. Lusk, M.D., New York.

11. Porro's Operation, Goelson Duncan, M.D., London, England.

12. Embryotomy or Cæsarean Section? Ginlio Kirch, M.D., Rignano Sull' Arno, Italy.

13. Craniotomy on the Living Fœtus, Robert B. Dixon, M.D., Boston, Mass.

14. Abdominal Section for the Removal of the Fœtus, Professor W. H. Wathen, M.D., Louisville, Kentucky.

15. A Study of Laparo-Elytrotomy, Alexander S. Clark, M.D., Paris.

16. On the Relation of the Atmosphere to Puerperal Fever, Joseph Kucher, M.D., New York, N. Y.

17. The Prophylaxis of Puerperal Fever, Professor Emil Ehrendorfer, M.D., Innsbruck.

18. A Study of certain Questions in connection with Puerperal Fever, with Particular Reference to the Use of the Intra-Uterine Douche and Curette, Professor Charles Warrington Earle, M.D., Chicago, Ill.

19. Antiseptic Midwifery from the Point of View of a Rural Practitioner, W. H. Sharp, M.D., Volcano, W. Va.

20. The Prevention of Puerperal Peritonitis, R. Lowrey Sibbet, M.D., Carlisle, Pa.

21. On the Prevention and Treatment of Puerperal Fever, Morse Madden, M.D., Dublin.

22. The Treatment of Miscarriage, E. Pasquali, M.D., Via Condotti 9, Rome.

23. Conservative Obstetrics, with especial reference to the Treatment of Abortion and the Third Stage of Labor, Professor Rodney Glisan, M.D., Portland, Ore.

24. The Kidney of Pregnancy, and its Obstetrical Significance, Professor A. L. S. Gusserow, M.D., Berlin.

25. The Causes and Modus of Sudden Death in Eclampsia and its Prevention, A. S. v. Mansfelde, Ashland, Neb.

26. Puerperal Eclampsia, Ira E. Oatman, M.D., Sacramento, Cal.

27. The Pernicious Vomiting of Pregnancy, Jacob Price, M.D., West Chester, Pa.

28. Vicarious Menstruation, Duncan C. MacCallum, M.D., M.R.C.S., Eng., Montreal.

29. A Study of Deventer's Method of Delivery of the After-coming Head, John Bartlett, M.D., Chicago, Ill.

30. On the Contracted Pelvis in America, Robert Herdegen, M.D., Milwaukee, Wis.

31. The Necessity of Accurate Diagnosis of the various Malformations found in the Pelvis, Professor Wm. S. Stewart, M.D., Philadelphia, Pa.

32. The Treatment of Posterior-Occipital Positions with Special Reference to Manual Rectification, J. Algernon Temple, M.D., M.R.C.S., Eng., Toronto.

33. Maternal Impressions Affecting the Fœtus, W. T. Taylor, M.D., Philadelphia, Pa..

34. The Influence of Leukæmia on Pregnancy, Illustrated by a Case, J. C. Cameron, M.D., 41 Belmont Park, Montreal.

35. Lithiasis in Pregnancy, J. E. Kelly, M.D., 16 East 29th St., New York, N. Y.

36. The Causes of Left Occipito-Anterior Positions in Vertex Presentations, J. W. Atwood, M.D., Burlington, Vt.

37. Internal Uterine Hæmorrhage, the Result of Over distension of the Uterus from Hydramnion, Professor Edward Hy. Trenholm, M.D., Montreal.

38. Relation of the Membranes to the Process of Parturition, Henry T. Byford, M.D., Chicago.

39. Delayed Involution, Prof. W. H. Byford, M.D., Chicago.

40. Development of the Placenta, H. O. Marcy, M.D., Boston, Mass.

41. The Histology of Reproduction, Middleton Michel. M.D , Charleston, S. C.

42. Dystocia from Rigidity of the Cervix and its Management, George Wheeler Jones, M.D., Danville, Ill.

Papers will also be read by the following gentlemen:

Prof. Gustav Braun, M.D., Vienna.
Professor A. Carpentier, M.D., Paris.
L. Ch. Boislinière, M.D., St. Louis, Mo.
J. F. Y. Paine, M.D., New Orleans.
J. Johnson Alloway, Montreal.
E. P. Sale, M. D., Aberdeen, Miss.
E. J. Doering, M.D., Chicago.
J. Amédéee Doléris, M.D., Paris.
A. Cordes, M.D., Geneva.
Thos. Menees, M.D., Nashville, Tenn.
Rodrigues Dos Santos, M.D., Rio de Janeiro.
D. Lloyd Roberts, M.D., Manchester, England.

DeLaskie Miller, M.D., *President.*
2011 Prairie Ave., Chicago.
W. W. Jaggard, M.D.,
2330 Indiana Ave., Chicago.
Joseph Kucher, M.D.,
33 East 33d St., New York.
Home Secretaries.

SECTION VII, ON ANATOMY.

The following is a list of papers proposed to be read in the Section on Anatomy:

The Bladder, by Reginald Harrison, F.R.C.S., etc., Liverpool, Eng.

The Wolffian Bodies, by William Mitchell Banks, M.D. (Ed.) F.R.C.S., etc., Liverpool, Eng.

A Paper (subject to be announced) by Prof. E. Frohmann, Jena, Germany.

The Intercranial Nerve Tracts in the Light of Atrophy Methods of von Gudden, by E. C. Spitzka, M.D., etc., New York.

On the Development of the Torus Longitudinalis in Telosians and its Homology in Higher Vertebrates, by Prof. Rabe Rückard, M.D., etc.

On the Surgical Collateral Branch of each of the Main Arteries of the Human Body, by Edward Souchon, M.D., New Orleans, La.

A Contribution to the Pathology of Hip Disease, by Milton Josiah Roberts, M.D., of New York.

Anatomy of the Male Uretha and its relation to Stricture, by E. R. Palmer, M.D., Louisville, Ky.

Does a Relationship exist between Anomalies of the Visual Apparatus and the so called "Neuropathic Tendency," by A. L. Ranney, M.D., New York.

A Paper (subject to be announced) by Thomas G. Morton, M.D., Philadelphia, Pa.

Compression Myelitis in Pott's Diseases, by George R. Elliott, M.D., New York.

Anatomy of the Foot and its relation to the Operation of Tentomy, by Lewis Hall Sayre, M.D., New York.

Anatomy of the Bladder and its relation to Rupture, by I. N. Bloom. Louisville Ky.

Dissection of a very Young Human Embryo, by Augustus C. Bernays, St. Louis, Mo.

On the Urethra, by Reginald Harrison, F.R.C.S., etc., Liverpool, Eng.

Anatomy and Surgical Importance of the Renal Capsule and the Perirenal Adipose Tissue, by L. H. Dunning M.D., etc., South Bend, Ind.

Specimen, by W. T. Oppenheimer, M.D., etc., Richmond, Va.

The Didactic Teaching of Human Anatomy, by F. W. Langdon, M.D., etc., Cincinnati, Ohio.

A Contribution to the Pathology of Spinal Caries, by Milton Josiah Roberts, M.D., etc., New York.

Umbilical Cord, by C. W. Kelley, M.D., etc., Louisville, Ky.

Frozen Sections of the Male Pelvis showing relations of Peritoneum to Rectum, Blapder, and Median Line of Abdominal Wall, with special reference to

Supra-Pubic Cystomy, by Albert B. Strong, M.D., Chicago, Ill.

The Mesocephelon of the True Reptile, by E. C. Spitzka, M.D., etc., New York.

The Anatomy of the Rectum and its relation to Reflexes, by J. M. Matthews, M.D., Louisville, Ky.

Paper, title not announced, by L. S. McMurtry, M.D., Danville, Ky.

Studies in Brain Surgery, by Hal. C. Wyman, M.D., Detroit, Mich.

The Peritoneum and its relation to Injuries of the Bladder, by N. B. Carson, M.D., St. Louis, Mo.

Contribution to the Pathology of Knee-Jolnt Disease, by Milton Josiah Roberts, M.D., New York.

The Groove of the Central Veins on the Inner Table of the Calvarium, by Frank R. Fry, M.D., etc., St. Louis, Mo.

Anatomical Considerations concerning the Applicaton of Plaster-of-Paris Dressings to Fractures of the Femur, by W. B. Rogers, M.D., etc., Memphis, Tenn.

The Anatomy of the Urethra and Prostate Gland and Bladder, with special reference to Surgical Relief for Enlarged Prostate in Old Men, by Wm. C. Wile, M.D., etc., Philadelphia, Pa.

Presentation of Anatomical Specimen, by George Benjamin Johnson, M.D., etc., Richmond, Va.

Anatomical Points involved in Loss of Complete Scalp, including one Ear and greater portion of the Eyelids, by F. C. Schaefer, M.D., etc., Chicago, Ill.

The Colon, by S. K. Crawford, M.D., Chicago, Ill.

Anomalies of the Middle Thyroid Artery, with presentation of Specimen, by Max J. Stern, M.D., etc., Philadelphia, Pa.

The Anatomy and Relations of the Cæcum and Vermiform Appendix with Special Reference to the Surgery of the Parts, by Hermann M. Briggs, M.D., etc., New York, N. Y.

On Comparison of Twenty Superior Maxillary Bones, by E. M. Wilson, M.D., Bridgeport, Conn.

The Destruction of Dissection-Room Offal, by H. C. Boenning, M.D., etc., Philadelphia, Pa.

Anatomical Points of Value in the Diagnosis and Treatment of Some of the Joint Affections, by N. Stamm, M.D., etc., Fremont, O.

A Plea for some Reforms in the Present Methods of Teaching Anatomy, by Wm. Perrion Nickson, M.D., etc., Atlanta, Ga.

The Anatomy of the Vermiform Appendix, with some of its Anomalies, by F. M. T. McKennan, M.D., etc., Pittsburg, Pa.

The Proper Methods of Teaching Anatomy, by A. P. H. Leuf, M.D., etc., Philadelphia, Pa.

Paper, title not announced, by Joseph Dickson, M.D., etc., Pittsburg, Pa.

Reports of Three Cases of Nephrectomy, with special reference to the Anatomy, by Geo. Halley, M.D., etc., Kansas City, Mo.

The Anatomy of Stricture, by J. Kneely Rhodes, M.D., etc., Philadelphia, Pa.

The Pivotal Point in Anatomy and the Principle Underlying It, by W. H. Triplet, M.D., etc., Woodstock Va. WM. H. PANCOAST, A.M., M.D.,

President of Section.

SECTION X—DISEASES OF CHILDREN.

The Section will meet at 3 P.M., Monday, September 5.

The following papers will be read in the order named:

1. An Investigation to Determine whether the Absence of Sewage and of Water Pollution diminishes the Prevalence and Severity of Diphtheria, by Dr. Chas. Warrington Earle, Chicago, Ill.

2. Rate of Growth in American and British Children, and its Bearing on the Investigation of Diseases, by Prof. W. Stephenson, Aberdeen, Scotland.

3. The Diseases of Faulty Habit, by Dr. James F. Goodhart, London, Eng.

4. Deleterious Results in Children of a Narrow Prepuce and Preputial Adhesions, by Prof. Lewis A. Sayre, New York, N. Y.

The discussion will be opened by Prof. W. T. Belfield, Chicago, Ill., and Dr. DeForest Willard, Philadelphia, Pa.

TUESDAY, A.M., SEPTEMBER 6.

1. The Milk Supply of the Cities. Adulterations and Modes of Detecting Them, by Dr. Cyrus Edson, New York, N. Y.

2. The Nutrition of Infants, by Prof. Albert Leeds, Stevens Institute, Hoboken, N. J.

3. The Use of Cow's Milk in the Feeding of Infants, by Prof. V. C. Vaughan, University of Michigan, Ann Arbor, Mich.

TUESDAY, P.M., SEPTEMBER 6.

1. Anatomical Characters of Membranous Croup as observed in Fatal Cases in the New York Foundling Asylum, by Dr. W. P. Northrup, New York, N. Y.

2. Remarks on Tubage of the Glottis and the Manner in which it was Practised in France, by Dr. E. Bouchut, Paris.

3. Intubation of the Larynx, with Demonstration on the Living Subject, by Dr. Joseph O'Dwyer and Dr. Dillon Brown. New York, N. Y.

4. Intubation versus Tracheotomy in the Treatment of Croup, by Prof. F. E. Waxham, Chicago, Ill.

WEDNESDAY, A.M., SEPTEMBER 7.

1. The Treatment of Strumous Glandular Enlargement of the Neck, by Dr. Martin Oxley, Liverpool, Eng.

2. Infantile Convulsions in Connection with After Neurotic Tendencies, by Dr. J. A. Coutts, London, Eng.

3. A Study of some of the Bacteria found in the Dejecta of Infants Affected with Summer Diarrhœa, by Dr. W. D. Booker, Baltimore, Md.

WEDNESDAY, P.M., SEPTEMBER 7.

1. Hallucinations in Young Children, by Dr. E. Bouchut, Paris.

2. Cerebral Irritation in Children, by Dr. Jules Simon, Paris.

3. Treatment of Diphtheria by Antiseptic Sprays, by Dr. Grancher, Paris.

4. Treatment of Physiological Derangements in

Children due to Over-Feeding, by Dr. Cadet de Gassicourt, Paris.

5. Notes on the Malaria of Children in Brazil, by Dr. Moncorvo, Rio de Janeiro.

THURSDAY, A.M., SEPTEMBER 8.

1. Observations regarding True Pneumonia in Children, by Prof. A. D'Espine, Geneva.

2. Subject not announced, by Prof. Oscar Wyss, Zurich, Switzerland.

3. Some Observations on Headaches in Children and their Relation to Mental Training, by Dr. W. H. Day, London.

Discussion to be opened by Dr. W. S. Dennett, Oculist, on Headaches in Children produced by Errors of Refraction.

4. Scarlatina Nephritis from a Clinical and Pathological Standpoint, by Dr. Henry Ashby, Manchester.

Discussion to be opened by Frank Grauer, Pathologist, on the Pathology of Scarlatina Nephritis.

THURSDAY, P.M., SEPTEMRER 8.

1. The Contagious Principle of Pertussis, by Prof. Alfred Vogel, Munich.

2. The Nature of Whooping Cough and its Antiseptic Treatment, by Dr. Moncorvo, Rio de Janeiro.

3. On Acetonuria in Children, by Dr. Adolph Baginsky, Privadocent of the University of Berlin.

4. Hereditary Syphilis and Rachitis in Brazil, by Dr. Moncorvo, Rio de Janeiro.

5. Marasmus, by Dr. I. N. Love, St. Louis, Mo.

FRIDAY, A.M., SEPTEMBER 9.

1. The Treatment of Lateral Curvature, by Dr. James Knight, New York.

2. Anchylosis of the Knee Joint in a Straight Position by Excision as a Remedy for the Atrophy and Deformity following Acute Poliomyelitis of Childhood, by Dr. Stephen Smith, New York.

3. Hip Disease, Practical Points in its Treatment, by Dr. A. J. Steele, St. Louis.

FRIDAY, P.M., SEPTEMBER 9.

Adjournment (optional). Mount Vernon Excursion Saturday.

1. Forcible Correction of Contracted Knee Joint, by Dr. E. H. Bradford, Boston.

2. Progress of Orthopædic Surgery, by Dr. Noble Smith, London.

3. Section of Contracted Tissues essential before Mechanical Treatment can be Effectual, by Dr. Lewis A. Sayre, New York.

4. The Scope and Limitations of Orthopædy, by Dr. C. Fayette Taylor, New York.

EXCURSION TO THE CONGRESS.

A meeting of St. Louis phyicians, who will attend the Ninth International Congress, was held on Saturday, August 6th. A committee was appointed to make arrangements for an Excursion to Washington, by which all the delegates from St. Louis might go together. It was also proposed that an invitation to join this Excursion be given to delegates of Missouri, Illinois, Indiana, Kansas and Arkansas, and others who can start from St. Louis. The Excursion will leave St. Louis Friday morning, September 2, at 8 o'clock, by the Ohio & Mississippi Railway. This will enable the delegates from Illinois and Indiana to join the party during the day, and arrive at Cincinnati at night. The next day the Excursion will pass the beautiful Cheat River country, the Allegheny Mountains, Cumberland Gap and Harper's Ferry, reaching Washington via the Baltimore & Ohio Railroad, at 1:15 P.M., Saturday; giving ample time to make all arrangements before the meeting. The party will be personally conducted by Mr. G. D. Bacon, General Western Passenger Agent of the Ohio & Mississippi Railway. Special rates have been secured and the best accommodations promised by the Company. These rates and accommodations are also extended to members of the families of physicians who may go. The committee recommend that all physicians who expect to attend, arrange to be in Washington not later than Saturday. Those who desire to join this Excursion, please communicate at once with Mr. Bacon, or with any of the committee. State whether a through sleeper is desired.

The committee further recommend that on account of the probably crowded condition of the places of registration, that members should register in advance, by sending ten dollars to Dr. J. M. Toner, No. 615 Louisiana Avenue, Washington, D. C. Enclose a stamp for return receipt or ticket of registration. This ticket of registration entitles you to the three (3) large volumes of proceedings, even though you should not attend. A great many physicians from neighboring States have already written that they would join this excursion.

I. N. LOVE, M.D., Grand & Lindell Ave's,
J. R. LEMEN, M.D., No. 3217 Lucas Ave.
Wm. PORTER, M.D., No. 3137 Lucas Ave.
St. Louis, Mo. *Committee.*

LOCAL COMMITTEE OF ARRANGEMENTS.—TO THE MEDICAL PROFESSION: The Local Committee of Arrangements have the pleasure to announce to their American brethren that the widespread desire to attend the Congress is such that the amount of money for the reception and entertainment heretofore deemed sufficient will be entirely inadequate to provide for the large number that will be in attendance. They are therefore constrained to appeal to their brethren throughout the country for additional subscriptions to the entertainment fund. They feel that to their patriotic countrymen it is only necessary for the fact to be stated in order to secure the sending of such liberal contributions as will insure the entire success of the social features of this great international gathering on a scale commensurate with its dignity and importance. Let all Americans come to the front, and insure to ALL the members the full measure of the hospitality of free America. Contributions should be immediately forwarded to Dr. C. W. Franzoni, member of the Finance Committee for the District of Columbia.

By order of the
LOCAL COMMITTEE OF ARRANGEMENTS.

DR. GEORGE FIELDING BLANDFORD, 71 Grosvenor street, London, formerly Lecturer on Psychological Medicine at St. George's Hospital, has promised to give a "General Address" before the International Medical Congress "On the Treatment of Recent Cases of Insanity in Asylums and in Private Houses." Dr. Blandford occupies a high position among the psychologists of England, and his address will doubtless prove instructive.

THE PROGRAMME OF THE GENERAL ADDRESSES before the Congress is understood to be as follows:

Monday—Address by the President of the Congress, Dr. Davis.

Tuesday—Drs. Flint, of New York, and Semmola, of Naples.

Wednesday—Drs. Unna, of Germany, and Blandford, of England.

Thursday—Drs. Lutaud, of Paris, and Neudorfer, of Vienna.

Friday—Business meeting.

Many of the Presidents of Sections will open their sessions by an appropriate address, and there is likely to be an *embarras de richesse*, as the worthy papers are apparently in excess of the time allotted the sessions for their reading and discussion.

Committees of Reception for foreign delegates have been appointed in New York, Boston, Philadelphia, and Baltimore.

MISCELLANEOUS.

RECOGNITION OF DENTAL GRADUATES.—At the meeting of the Chicago Dental Club, on June 27, 1887, the following was adopted:

WHEREAS, At the last annual meeting of the American Medical Association, held in this city, a resolution was passed recognizing the graduates of all Dental Colleges which require a thorough course of instruction in all the fundamental sciences which underlie Medicine and Surgery, equal to the standard required by the best Medical Colleges of our land, as entitled to membership in in this Association with all its privileges, and

WHEREAS, Our honored friends, Drs. N. S. Davis and W. W. Allport, of Chicago, were largely instrumental in bringing about this action of the Association, and

WHEREAS, Both of these gentlemen have always taken an active interest in promoting higher education among dentists, and were also largely instrumental in the establishment of Dental Chairs in the Medical Colleges of our city, and the Section of Dental and Oval Surgery in the International Medical Congress, therefore, be it

Resolved, That we, the members of the Chicago Dental Club, express our appreciation of their untiring efforts and devotion to the cause of higher professional education, and the elevation of our "specialty" to the position which its scientific attainments deserve.

JOHN S. MARSHALL,
A. E. BALDWIN,
J. AUSTIN DUNN.

HEALTH IN MICHIGAN, JULY, 1887.—For the month of July, 1887, compared with the preceding month the reports indicate that diarrhœa, cholera morbus, cholera infantum and dysentery increased, and that rheumatism, influenza, neuralgia, bronchitis, pneumonia and tonsilitis decreased in prevalence. Compared with the preceding month the temperature in the month of July, 1887, was higher, the absolute humidity was more, the relative humidity was less, the day azone was about the same and the night ozone was less. Compared with the average for the month of July in the nine years, 1879–1887, cholera morbus, cholera infantum and diarrhœa were more prevalent, and intermittent fever, consumption of lungs, remittent fever, scarlet fever and diphtheria were less prevalent in July, 1887.

Including reports by regular observers and others diphtheria was reported present in Michigan in the month of July, 1887, at thirty-six places, scarlet fever at twenty-five places, measles at twenty-seven places, typhoid fever at sixteen places, typhus fever at one place.

Reports from all sources show diphtheria reported at three places less, scarlet fever at twenty four places less, typhoid fever at four places more, measles at nine places less, small-pox at one place less and typhus fever at the same number of places in the month of July, 1887, as in the preceding month.

SOUTH MICHIGAN MEDICAL ASSOCIATION.—At its annual meeting, held in Adrian, July 12, 1887, the following officers were elected for the ensuing year: President, Dr. D. H. Wood, of Quincy; Vice-President, Dr. J. F. Jenkins, of Tecumseh; Treasurer, Dr. M. P. Malden, Tecumseh; Secretary, Dr. B. Whelan, Hillsdale.

DINNER TO FOREIGN MEDICAL EDITORS.—The Association of American Medical Editors will give a banquet to distinguished medical editors from abroad on Monday, September 5, 1887, at 10 o'clock P.M., at the Riggs House, Washington, D. C.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 6, 1887, TO AUGUST 12, 1887.

Major J. C. McKee, Surgeon, ordered for duty at Watertown Arsenal, Mass. S. O. 181, A. G. O., August 6, 1887.

Major H. E. Brown, Surgeon, sick leave extended to August 6, 1887, on account of sickness. S. O. 184, A. G. O., August 10, 1887.

Major P. J. A. Cleary, Surgeon, ordered to Ft. McDowell, A. T., instead of Ft. Assiniboine, M. T. S. O. 110, A. G. O., August 5, 1887.

Capt. Jno. M. Dickson, Asst. Surgeon, died August 8, 1887 (station Ft. Mason, Cal).

Capt. J. C. Merrill, Asst. Surgeon, ordered from Ft Klamath, Ore., to Watervliet Arsenal, N. Y. S. O. 181, A. G. O., August 6, 1887.

First Lieut. Wm. E. Hopkins, Asst. Surgeon, ordered from Angel Island, Cal., to Ft. Mason, Cal. S. O. 184, A. G. O., August 10, 1887.

First Lieut. C. N. B. Macauley, Asst. Surgeon, promoted to be Asst. Surgeon with the rank of Captain, by operation of law. August 10, 1887.

First Lieut. J. E. Pilcher, Asst. Surgeon, ordered from Ft. Monroe, Va., to Ft. Wood, New York Harbor. S. O. 180, A. G. O., August 5, 1887.

First Lieut. C. L. G. Anderson, Asst. Surgeon (station, Whipple Bks., A. T.), ordered to Ft. McDowell, A. T. S. O. 81, Dept. Ariz., August 3, 1887.

First Lieut. Wm. N. Suter, Asst. Surgeon, ordered to return to Washington Bks., D. C., on the breaking up of the camp at Creedmoor, N. Y. S. O. 166, Div. Atlantic, August 10, 1887.

CORRIGENDA.

In THE JOURNAL of Aug. 13, p. 193, col. 1, 7th line, omit *posterior*.

On p. 195, column 1, 7th line, read "thus will the perineum be *saved*."

On p. 196, paragraph beginning "Dr. Boisliniere," begin to read with "Naegelé teaches," etc.

In 4th line of that paragraph read *next in frequency* for "last in frequency." In 13th line of same read *these cases* for "his cases." In 14th line insert *or* after "flat." In 27th line read *placed* for "face." Omit last half of line 32 and first half of line 33.

Page 196, 2d col., 7th line from bottom, read *insolation* for "isolation."

Page 198, col. 1, line 29, insert *such* before "force." Same, line 40, read *automatism* for "automation." Same p., 2d col., 3d paragraph, for "Yet, cases are reported," read "Yes, cases are reported."

On p. 199, summary of 1st table, read "Of 24 known," etc. Summary of 2d table, omit "not," and read "Of 20 known 15," etc. Summary of 3d table read "Of 18 known," etc.

Page 200, under 4, 2d col., 5th line, for "new elements," read *nerve elements*.

Page 204, col. 2, under *Case 1*, 6th line, read "and the sight became very dim."

Page 206, 22d and 23d lines of col. 1, read *micro-organisms* and *neuro-retinitis*.